Annie-2 Development Drilling Environment Plan

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Acronyms and Abbreviations

Acronym	Definition
AAD	Australian Antarctic Division
ABN	Australian Business Number
ACN	Australian Company Number
AEL	Amplitude Energy Ltd
AEMS	Amplitude Energy Management System
AEP	Australian Energy Producers
AFFF	Aqueous Film forming Foam
AFMA	Australian Fisheries Management Authority
AGP	Athena Gas Plant
AHO	Australian Hydrographic office
AHS	Australian Hydrological Service
AHT	Anchor Handling Tug
AHTS	Anchor handling and tow support vessels
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
ALA	Atlas of Living Australia
ALARP	As Low as Reasonably Practicable
ALs	Acceptable Levels
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park
AMPs	Australian Marine Parks
AMSA	Australian Maritime Safety Authority
ANZG	Australian and New Zealand Guidelines
AOF	Absolute Open Flow
API	American Petroleum Institute
APPEA	Australian Petroleum Production and Exploration association
APSC	Australian Public Service Commission
AR6	Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report
ARS	Area Restricted Searches
ASOG	Activity Specific Operation Guideline
ASP	Athena Supply Project

Acronym	Definition
ASTM	American Society for Testing and Materials
AU	Australia
AUD	Australian Dollar
AUSCOAST	Coastal Navigational Warnings
AUV	Autonomous Underwater Vehicle
AVG	Abalone Viral Ganglioneuritis
AZTECH	Aztech Well Construction Services
BHST	Bottomhole Static Temperature
BIA	Biologically Important Area
BIAs	Biologically Important Areas
BMG	Basker-Manta-Gummy
BoM	Bureau of Meteorology
BOP	Blow-Out Preventer
BP	British Petroleum
BRS	Bureau of Rural Sciences
BWMC	Ballast Water Management Convention
CAS	Chemical Abstracts Service
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CEMS	Cooper Energy Management System
CEO	Chief Executive Officer
CFA	Commonwealth Fisheries association
CFCs	chlorofluorocarbons
CFSR	Climate Forecast System Reanalysis
CH4	Methane
CHARM	Chemical Hazard assessment and Risk Management
CHIRP	Compressed High-Intensity Radar Pulse
CHN	Casino-Henry-Netherby
CIA	Cumulative Impact Assessment
CM	Control Measure
CMA	Commonwealth Marine Area
CMP	Conservation Management Plan
CMS	Cooper Energy Management System

Acronym	Definition
CO2	Carbon Dioxide
CoA	Commonwealth of Australia
COLREGs	Convention on the International Regulations for Preventing Collisions At Sea 1972
CP	Cathodic potential
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSV	Construction Support Vessel
CTD	Conductivity, Temperature and Depth
DAFF	Department of Agriculture, Fisheries and Forestry (Cwth)
DAWE	Department of Agriculture, Water and the Environment
DAWR	Department of Agriculture Water and Resources, superseded by Department of Agriculture Water and the Environment (DAWE)
DCCEEW	Department of Climate Change, Energy, the Environment and Wate
DEECA	Department of Energy, Environment and Climate Action
DELWP	Victorian Department of Environment, Land, Water and Planning
DEWHA	Department of the Environment, Heritage, Water and the Arts
DGV	Default Guideline Value
DISC	Australian Drilling Industry Steering Committee
DJSIR	Department of Jobs, Skills, Industries and Regions
DLS	Dogleg Severity
DMS	Degrees-Minutes-Seconds
DOA	Department of Agriculture
DoE	Department of the Environment
DoEE	Department of the Environment and Energy
DP	Dynamic Positioning
DPC	Department of Premier and Cabinet
DPI	Department of Primary Industries
DPIRD	Department of Primary Industries and Regional Development
DSV	Dive support and survey vessels
DWH	Deep Water Horizon
EAC	East Australian Current
ECSP	East Coast Supply Project
ELT	Executive Leadership Team

Acronym	Definition
EMAC	Eastern Maar Aboriginal Corporation
EMBA	Environment that May Be Affected
EMP	Emergency Management Plan
EP	Environment Plan
EPBC	Environment Protection and Biodiversity Conservation Act 1999
EPO	# Environment Protection Order or Environment Performance Outcome
EPS	Environment Performance Standard
ER	Emergency Response
ERP	Emergency Response Plan
ESD	Ecologically Sustainable Development
EST	Eastern Standard Time
EWS	Endangered Whale Species
FCAFC	Federal Circuit and Family Court of Australia.
FLNG	Floating Liquefied Natural Gas
FM	Frequency Modulation
FPSO	Floating Production, Storage and offloading
FWRAM	Full Waveform Range-dependent Acoustic Model
GHG	Greenhouse Gases
GMP	Garbage Management Plan
GMTOAC	Gunditj Mirring Traditional Owners Aboriginal Corporation
GOMO	Guidelines for Offshore Marine Operations
GV	Guideline Value
HAZID	Hazard Identification
HAZOP	Hazard and Operability Analysis
HCTS	Habitat Critical to the Survival
HFO	Heavy Fuel Oil
HP	High Pressure
HQ	Hazard Quotient
HSE	Health, Safety and Environment
HSEC	Health, Safety, Environmental and Community
HSEQ	Health, Safety, Environment, and Quality
HCTS	Habitat Critical to the Survival

Acronym	Definition
IAPP	International Air Pollution Prevention
ICE	Inventory of Carbon and Energy
ID	Internal Diameter
IM	Incident Management
IMCRA	Integrated Marine and Coastal Regionalisation of Australia
IMO	International Maritime Organisation
IMP	Cooper Energy Incident Management Plan
IMR	Inspection Maintenance & Repair
IMS	Invasive Marine Species
IMT	Incident Management Team
INJ	Injury
IOGP	International association of Oil and Gas Producers
IOPP	International Oil Pollution Prevention
IPA	Indigenous Protected Area
IPCC	Intergovernmental Panel on Climate Change
IPIECA	International Petroleum Industry Environmental Conservation Association
IR	Infrared
ISO	International Standards Organisation
ISPP	International Sewage Pollution Prevention
ITOPF	International Tank Owners Pollution Federation
IUCN	International Union for Conservation of Nature
IWC	International Whaling Commission
JASCO	Jasco Applied Sciences
JRCC	Joint Rescue Coordination Centre
KBOS	Kinetic Blow-out Stopper
KCl	potassium chloride
KEF	Key Ecological Feature
KEFS	Key Ecological Features
LDADs	low-density artefact distribution
LEL	Lower Explosive Limit
LELs	Lower Explosive Limits
LGA	Local Government Area

Acronym	Definition
LGAs	Local Government Areas
LOC	Loss of Containment
LOWC	Loss of Well Control
LTD	Limited
LWD	Logging While Drilling
MAE	Major Accident Event
MAEs	Major Accident Events
MARPOL	International Convention for the Prevention of Pollution from Ships
MASP	Maximum Anticipated Surface Pressure
MBES	Multi-Beam Echo Sounder
MCD	Mudline Closure Device
MDO	Marine Diesel Oil
MEG	Monoethylene Glycol
MESA	Marine Education Society of Australasia
MGO	Marine gas oil
MM	millimeter
MMO	Marine Mammal Observer
MMOs	Marine Mammal Observers
MNES	Matters of National Environmental Significance
MNP	Marine National Park
MNPs	Marine National Parks
MO	# Species of Species Habitat May Occur Within Area or Marine Orders
MOC	Management of Change
MODU	Mobile offshore Drilling Unit
MODUs	Mobile Offshore Drilling Units
MOU	Mobile Offshore Unit
MPs	Marine Parks
MRU	Marine Response Unit
MS	Management System
MSS	Marine Seismic Survey
NA	Not Applicable
NB	Nota bene

Acronym	Definition
NCEP	National Centre for Environmental Prediction
NDC	Nationally Determined Contribution
NDCs	Nationally Determined Contributions
NEBA	Net Environmental Benefit Analysis
NERA	National Energy Resources Australia
NGER	National Greenhouse and Energy Reporting
NGOs	non-governmental organisations
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOO	National Oceans Office
NOPSEMA	National offshore Petroleum Safety and Environmental Management Authority
NOPTA	National offshore Petroleum Titles Administrator
NORMS	Naturally Occurring Radioactive Materials
NO_x	Nitrogen Oxides
NPS4	National Parks Act Schedule 4 park or reserve
NPS6	National Parks Act Schedule 6 park or reserve
NRDA	National Resource Damage Assessment
NRE	Department of Natural Resources and Environment (Tas)
NSW	New South Wales
NTM	Notice to Mariners
NWS	North-west Shelf
NZ	New Zealand
OCNS	Offshore Chemical Notification Scheme
OECEA	Offshore Environment Chemical Environment Assessment (Database)
OGUK	Oil and Gas UK
OIM	Offshore Installation Manager
OPEP	Oil Pollution Emergency Plan
OPGGS	Offshore Petroleum and Greenhouse Gas Storage (Act 2006)
OPP	Offshore Project Proposal
OSCA	Oil Spill Control Agents
OSMP	Operational and Scientific Monitoring Plan

Acronym	Definition
OSPAR	Oslo/Paris convention (for the Protection of the Marine Environment of the North-East Atlantic)
OSTM	Oil Spill Trajectory Modelling
OSV	Offshore Support Vessel
OWR	Oiled Wildlife Response
OWF	Offshore Wind Farm
P&A	Plug and Abandon
PAM	Passive Acoustic Monitoring
PBW	Pygmy Blue Whale
PFOA	perfluorooctanoic acid
PFOS	Perfluorooctane Sulfonic Acid
PIC	Person in Charge
PK	Peak Sound Level
PLONOR	Pose Little or No Risk to the Environment
PMS	Planned Maintenance System
PMST	EPBC Act Protected Matters Search Tool
PNEC	Potential No Effects Concentration
POB	Persons on Board
PSZ	Petroleum Safety Zone
PSZs	Petroleum Safety Zones
PTS	Permanent Threshold Shift
PTY	Proprietary company
RAMSAR	Importance especially as Waterfowl Habitat 1971
RAP	Reconciliation Action Plan
RAPs	Reconciliation Action Plans
RMR	Riserless Mud Recovery (System)
RMS	Root Mean Square
RO	Reverse Osmosis
ROV	Remote Observation Vehicle
ROVs	Remote Observation Vehicles
RPAs	Response Priority Areas
RTM	Response Time Model

Acronym	Definition
RTMs	Response Time Models
RW	Relief Well
SA	South Australia
SBDF	Synthetic Based Drilling Fluid
SBM	Synthetic Based Mud
SBP	Sub Bottom Profiler
SCAT	Shoreline Cleanup and Assessment Technique
SCERP	Source Control Emergency Response Plan
SCR	Safety Case Revision
SDS	Safety Data Sheet
SE	South-East
SEEMP	Ship Energy Efficiency Management Plan
SEI	Socio-economic Impact
SEL	Sound Exposure Level
SEL_{SS}	Sound Exposure Level Single Strike
SEMR	South-East Marine Region
SESS	Southern and Eastern Scalefish and Shark
SESSF	Southern and Eastern Scalefish and Shark Fishery
SETFIA	South East Trawl Fishing Industry association
SFRT	Subsea First Response Toolkit
SIMAP	Spill Impact Mapping Analysis Program
SIMOPS	Simultaneous Operations
SIV	Seafood Industry Victoria
SMPEP	Shipboard Marine Pollution Emergency Plan
SMS	# Short Message Service or Santos Management System
SoE	State of the Environment
SOLAS	Safety of Life At Sea
SOPEP	Shipboard Oil Pollution Emergency Plan
SoV	Scope of Validation
SO_x	Sulphur Oxides
SPL	Sound Pressure Level
SFRT	Subsea First Response Toolkit

Acronym	Definition
SRW	Sound Transmission Loss Modelling
SS	Steam Ship
SSD	Subsea Dispersant
SSS	Side-Scan Sonar
SST	Sea Surface Temperature
SVP	Sound Velocity Profiler
TA	# Tuna Australia or Tasmania
TD	Total Depth
TEC	Threatened Ecological Community
TPCs	Third Party Contractors
TSS	Total Suspended Solid
TSSC	Threatened Species Scientific Committee
TTS	Temporary Hearing Threshold Shift
UCH	Underwater Cultural Heritage
UK	United Kingdom
US	United States
USBL	Ultra-short Baseline
UWCH	Underwater Cultural Heritage
UXO	Unexploded ordnance
VBA	Victorian Biodiversity Atlas
VFA	Victorian Fisheries Authority
VIC	Victoria
VOCs	Volatile Organic Compound
VSC	Vessel Safety Case
VSP	Vertical Seismic Profiling
WA	Western Australia
WAN	Well Activity Notice
WBDF	Water-based Drilling Fluid
WBM	Water Based Mud
WBMs	Water Based Muds
WCD	Worst case discharge
WDCS	Whale and Dolphin Conservation Society

Acronym	Definition
WOMP	Well Operations Management Plan
WTOAC	Wadawurrung Traditional Owners Aboriginal Corporation

1.0 Introduction

1.1 Activity Overview

Cooper Energy (CH) Pty Ltd proposes to undertake development drilling within Commonwealth waters of the Otway Basin. Cooper Energy (CH) Pty Ltd is a subsidiary company of the parent company Cooper Energy which was rebranded as Amplitude Energy in November 2024. Amplitude Energy will be used throughout this EP to represent company ownership and title operation.

The proposed scope of the Annie-2 development drilling activity (hereafter referred to as 'the Activity') covered by this Environment Plan (EP) consists of the following activities:

- Survey, inspection and maintenance activities.
- Well construction activities, including development drilling, subsea tree (SST) installation, well-test, completions, and shut-in campaign.

All planned activities will occur within an operational area which is defined by a 3 km radius around the well site. The 3 km radius encompasses the outer extent of mooring equipment from the well site on the seabed. A 500 m temporary exclusion zone around the mobile offshore drilling unit (MODU), and a 500 m petroleum safety zone (PSZ) around the well will be applied.

Each activity will be conducted on a 24 hour, 7 days per week basis, with the activity proposed to commence as early as 1 April 2026, subject to rig availability, weather and regulatory approvals. The development well will remain shut-in from completion of drilling until connection via new flowline to existing CHN facilities currently proposed in Q2 2028. The estimated duration for each discrete activity within this timeframe is described in Section 3.2.

This EP identifies and evaluates credible environmental impacts and risks associated with the Activity and ongoing management of the suspended well until Q1 2031.

The tie-in of the well and future production from the well will be subject to future regulatory approvals and licencing and is not within the scope of this EP.

Refer to Section 2.0 for further details on the description of the proposed activities.

1.1.1 Context with other Activities in the Otway Region

Amplitude Energy is part of a drilling rig consortium who collectively are mobilising a single MODU to the Otway region. Each individual operator's drilling activities will be undertaken sequentially using the same MODU. This reduces the increased environmental impacts and risks that would exist if all the activities were being undertaken at the same time using different MODU's. Each operator consults separately on the activities that each are undertaking in the Otway.

1.2 Summary

The activity summary has been prepared from material provided in this EP.

The summary consists of the following table (Table 1-1) as required by Section 35 of the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (OPGGS) (Environment) Regulations 2023 (OPGGS(E)R).

Regulation 35(7)(a) of the OPGGS(E)R (2023) requires the items described in Table 1-1 be provided as a summary of the EP to NOPSEMA for public disclosure upon acceptance of the EP.

Amplitude Energy provides NOPSEMA the full EP for public disclosure.

Table 1-1: EP Summary of Materials Requirements

EP Summary Material Requirement	Relevant Section of EP Containing EP Summary Material
The location of the activity	Section 3.1
A description of the receiving environment	Section 4.0
A description of the activity	Section 3.0
Details of the environmental impacts and risks of the activity	Section 6.0
A summary of the control measures for the activity	Section 10.0
A summary of the arrangements for ongoing monitoring of the titleholder's environmental performance	Section 12.13
A summary of the response arrangements in the oil pollution emergency plan	Section 12.7.2
Details of consultation already undertaken and plans for ongoing consultation	Section 11.0
Details of the titleholders nominated liaison person for the activity	Section 1.6

1.3 Background

Exploration in the offshore Otway Basin has been undertaken for over 50 years, with hydrocarbons first discovered via drilling of the Pecten-1A well in 1969. Over the following decades, numerous other hydrocarbon discoveries have been made.

Existing offshore facilities include the Amplitude Energy operated Casino-Henry-Netherby (CHN) development which produces gas and condensate from Production Licence Areas VIC/L24 (Casino) and VIC/L30 (Netherby and Henry) (

Figure 3-2). The CHN development has included the drilling of 4 wells which have been producing gas for over a decade. Products from these wells are transported through a subsea pipeline to the onshore Athena Gas Plant (AGP) on Victoria's southwest coast for processing. Processed gas is directed to third-party pipelines, where it is transported domestically for use within the southern and eastern states.

The development wells drilled and tied into the CHN development are:

- Casino-4 and Casino-5 wells (located in VIC/L24) were installed in 2005 and have been producing since.
- Henry-2 and Netherby-1 development wells were drilled in 2008 and began producing in 2010. Netherby-1 was an exploration prospect with high geological certainty; the Netherby well was completed upon confirming successful intersect of commercially viable gas quantities.

All wells are currently producing gas back to the AGP.

1.3.1 Activity Approvals

To meet continued demand as existing fields decline Amplitude Energy proposes to continue the incremental development of adjacent fields and utilise existing CHN infrastructure to backfill and maintain supply. This is referred to as the East Coast Supply Project (ECSP). The ECSP is described

within the ECSP Offshore Project Proposal (**ECSP OPP**) (AEL 2025) which was approved by NOPSEMA on 7 July 2025 (Cooper Energy 2025). The Activity is a phase of the ECSP.

In accordance with Regulation 56 of the OPGGS(E)R, references to the **ECSP OPP** have been made throughout this EP. Concordance with the **ECSP OPP** is addressed in Appendix 1 - .

1.4 Purpose

This EP provides an identification and assessment of the environmental impacts and risks associated with the proposed exploration drilling activities and provides a demonstration that impacts and risks are reduced to 'As Low As Reasonably Practicable' (ALARP) and will be of an 'acceptable' level. Definitions for these terms are provided in Section 5.0. The activities proposed under this EP occur entirely within Commonwealth waters. Therefore, this EP has been prepared to satisfy the requirements of Commonwealth legislation and relevant regulations, namely:

- The Commonwealth OPGGS Act 2006 (OPGGS Act) administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).
- The Commonwealth OPGGS(E)R 2023, administered by NOPSEMA.

1.5 Scope

This EP relates to the activities within exploration permit area VIC/P44.

- Associated activities assessed within the scope of the EP include:
- Surveys – well integrity monitoring.
- Well construction - development drilling, well test, completion and shut-in.
- Support activities - MODU, vessels, helicopters, ROVs.
- Contingent activities – environmental surveys and P&A.
- Further details on the activities covered by the EP are provided in Section 3.0.
- Activities specifically excluded from the scope of this EP are:
- Connection of the development well to the existing CHN pipeline will be covered under a separate EP.

Vessels transiting to or from respective operational areas. These vessels are deemed operating under the Commonwealth Navigation Act 2012 and not performing petroleum activities.

1.6 Titleholder Details

Amplitude Energy is the proponents for the Activity. In accordance with (OPGGS(E)R) Section 23, the details of the titleholder and liaison person are provided in Table 1-2.

Further information about Amplitude Energy is available at: **www.amplitudeenergy.com.au**

Table 1-2: Titleholder and Liaison Person

Title Details	Titleholder Details	Liaison Person
VIC/P44	Name: Cooper Energy (CH) PTY. LTD: ABN: 70 615 355 023	Nathan Childs Chief Corporate Services Officer

Title Details	Titleholder Details	Liaison Person
	ACN: 615 355 023	Amplitude Energy Limited Level 11, 55 Currie Street Adelaide SA 5000 Phone: (08) 8100 4900 Email: **customerservice@cooperenergy.com.au**

2.0 Requirements

The Activity is located entirely within Commonwealth waters and therefore fall under Commonwealth jurisdiction. Activities located within Commonwealth jurisdiction must comply with two keys acts:

- OPGGS Act; and
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

In accordance with Regulation 21(4) of the Environment Regulations the relevant requirements that are applicable to drilling Annie-2 Development well are presented in Appendix 3 - . Requirements include relevant laws, legislations, codes, other approvals and conditions, standards, agreements, treaties, conventions, or practices (in whole or part) that apply to the jurisdiction that the activity takes place in. Australia is also a signatory to international conventions and agreements that oblige the Commonwealth government to prevent pollution and protect specified habitats, flora and fauna. These have also been addressed within Appendix 3 - . Appendix 3 - also summarises the relevant EP sections where a legislation may prescribe or control how an activity is undertaken. In accordance with Regulation 56 of the OPGGS(E)R, references to the **ECSP OPP** have been made throughout this EP. Appendix 1 - provides the concordance with the **ECSP OPP**.

3.0 Activity Description

This section provides a description of the Activity, including:

- location
- outline of the prospective field characteristics
- description of the activities which will occur and their timing.

3.1 Activity Location

The development activities will be undertaken in Commonwealth waters, off Victoria's southwest coast in the Otway Basin.

The approximate water depth and coordinates are provided in Table 3-1. Approximate coordinates are provided pending the completion of site surveys and finalising the well design.

Table 3-1: Approximate Coordinates of the Annie-2 Well

Location	**Title Area**	**Water Depth**	**Latitude**	**Longitude**
			DMS GDA94	
Annie-2	VIC/P44	56 m	38°41'1.50" S	142°49'29.38" E

3.1.1 Operational Area and Petroleum Safety Zone

The Annie-2 well is in proximity to the existing Otway offshore facilities (Section 3.1.2). The operational area is defined by a 3 km radius around the well location as shown in Figure 3-1. All activities described in the EP will occur in the operational area.

Petroleum safety zones (PSZs) (gazetted by NOPSEMA) will be in place around the MODU (temporary during the Activity) and the completed wells (ongoing). These PSZs are defined as a circular zone with a 500 m radius around the MODU surface location and the completed subsea well location.

During the Activity, a conservative 3.5 km exclusion / cautionary zone (communicated via Notice to Mariners) will be in place around the MODU and anchors (as the anchors may extend up to 2.5 km from the MODU, with allowance of a 1km buffer). Vessels not involved with the operations of the offshore facility are advised to avoid navigating, anchoring, stopping or fishing within the limits of any charted cautionary area.

All MODU, vessel and helicopter activities within the operational area are considered part of the petroleum activity. Activities outside of the operational area will be managed in accordance with applicable jurisdictional legislation.

3.1.2 Existing Infrastructure

A range of infrastructure exists and operates under existing Otway Offshore Operations – Casino, Netherby and Henry (Environment Plan approved by NOPSEMA on 11 December 2024) and the proposed drilling activities for the Athena Supply Project (Environment Plan approved by NOPSEMA on 8 May 2025) for Amplitude Energy (

Figure 3-2).

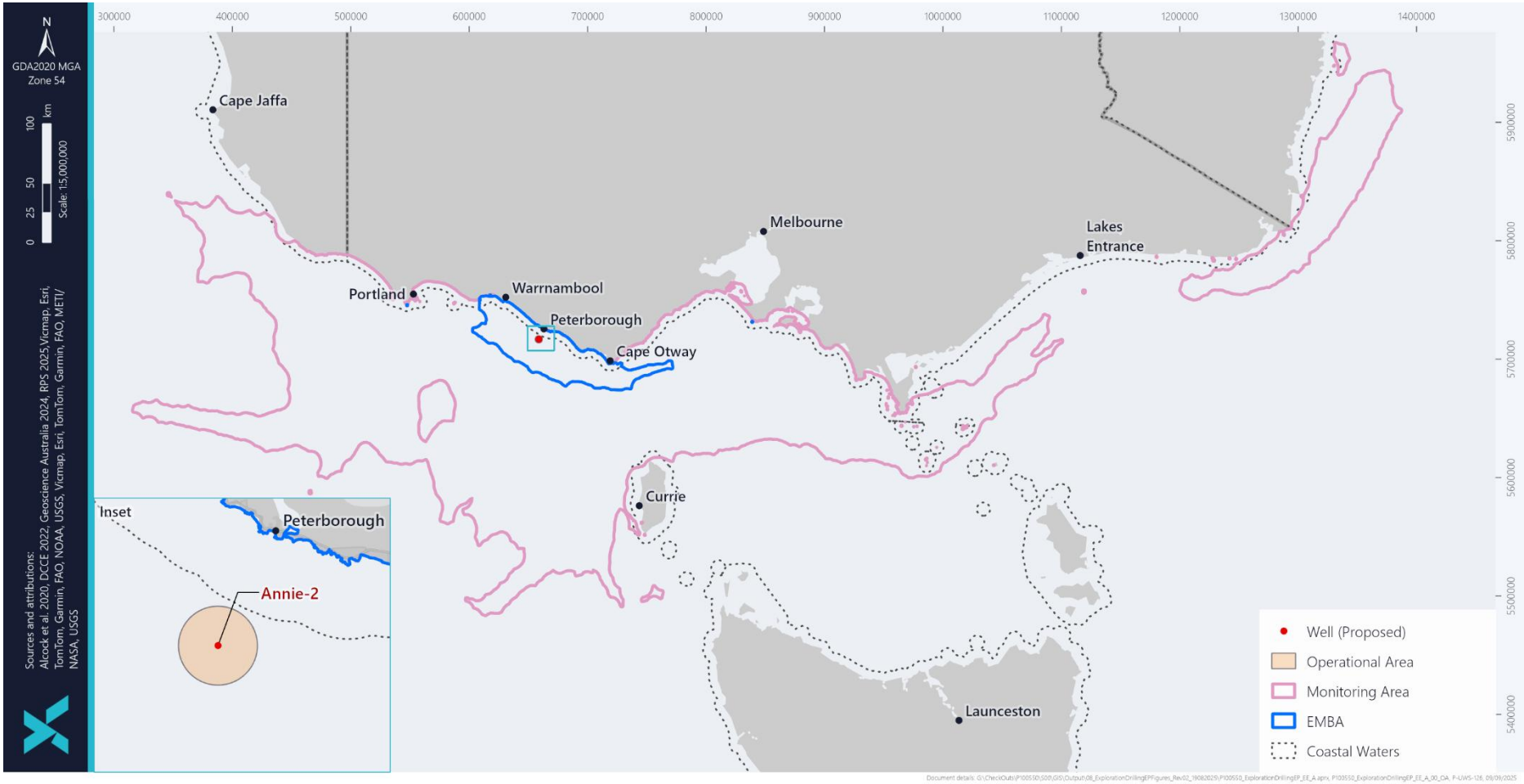


Figure 3-1: Operational Area

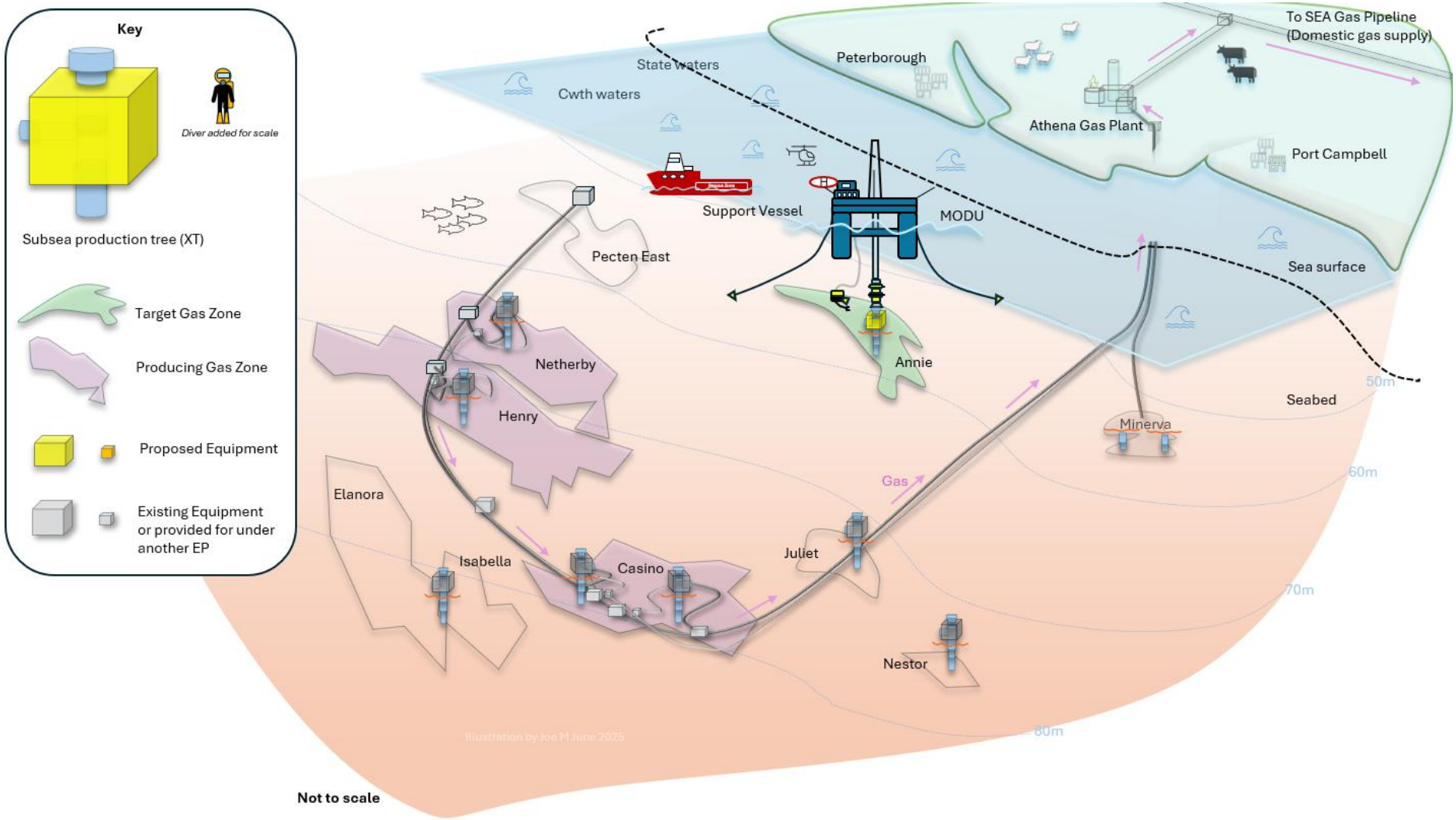


Figure 3-2: Existing Infrastructure and proposed Activities Illustration

3.2 Activity Duration and Timing

This EP covers a period of 5-years from acceptance, with the earliest start for any activity under this plan being Q2 2026. Well construction is expected to occur within the first 2 years from acceptance of the EP. Well integrity monitoring will be provided for the suspended well until tie-in and commissioning activities are completed. The well tie-in and commissioning activities will be managed in a separate EP.

All activities will operate on a 24 hour, 7 days per week basis.

Figure 3-3 describes the estimated duration for each activity.

Table 3-2 shows the indicative activity schedule. The timing of each activity will vary due to factors such as MODU and vessel availability and operational windows.

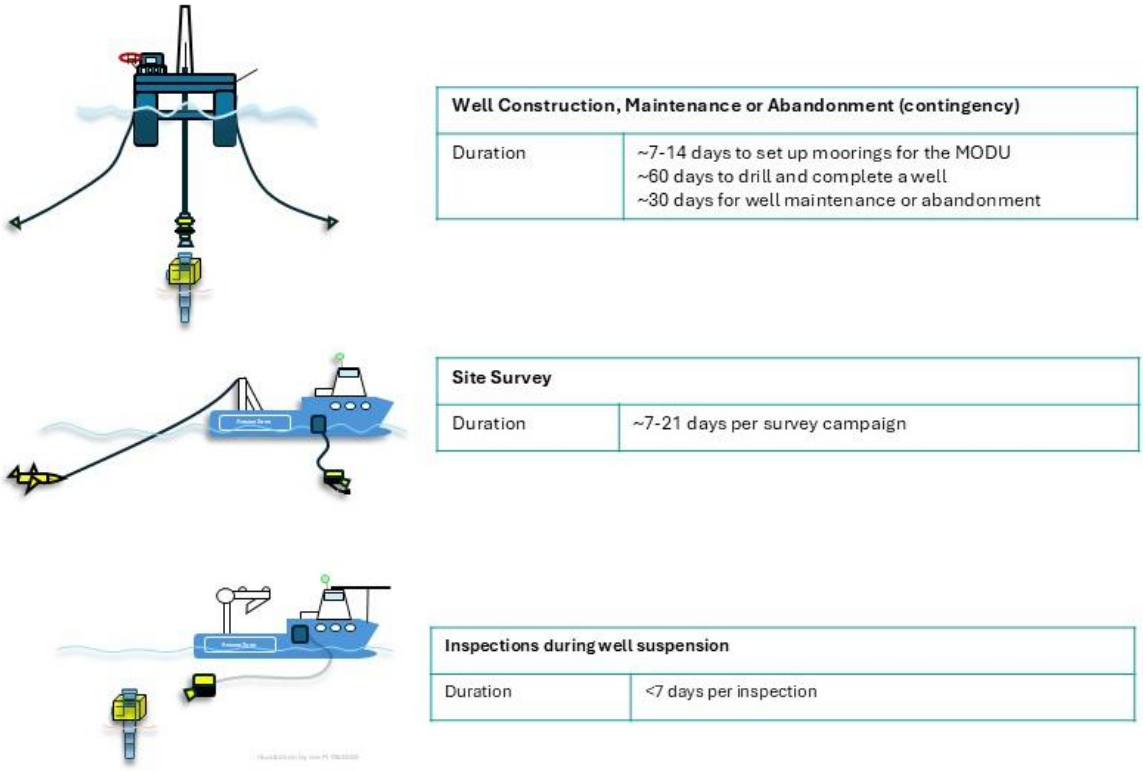


Figure 3-3: Activity Duration

Table 3-2: Indicative Activity Timing and Duration

Activity	Timing	Duration
Well construction	As early as Q2 2026.	60 days
Well integrity monitoring	Annually after drilling, until tie-in, hook-up and commissioning. Q3 2027 and Q3 2028.	~2 days per inspection

Activity	Timing	Duration
Environmental surveys*	Contingency in event environment surveys required within the life of the EP.	7 to 21 days
P&A*	If Annie-2 development well does not access a commercially viable resource following well testing, it will be abandoned at the time of well evaluation– Q2 2026. Annie-2 development well will be permanently abandoned within 3 years in the event the well is not tied into the existing CHN pipeline, or as accepted in the governing WOMP.	30 days

*Contingent activities as defined in Section 3.4.3.9.

3.3 Production and Field Characteristics

The Waarre C reservoir is the primary target for the development drilling program at the Annie Field (

Figure 3-2). The Annie reservoir formation has been identified as a viable reservoir target, with extensive production history from adjacent fields. Reservoir data obtained from the drilling of Annie-1 has been used to understand the reservoir characteristics that will be intersected by the Annie-2 well. The hydrocarbon targeted within the reservoir is gas-condensate and is expected to be Group II (light persistent) oil.

The reservoir conditions and gas components for the Annie field and proposed Annie-2 well have been detailed within Table 3-3.

Table 3-3: Annie Field Conditions and Gas Compositions

Parameter	Annie Field
Reservoir	Waarre C
Analogue condensate	Annie-1
Gas Specific Gravity	0.66
Condensate to Gas Ratio	Average of 2 bbl/MMscf
Gas Component	**Mole (%)**
Hydrogen sulphide	0.00
Nitrogen	0.88
Carbon Dioxide	7.60
Methane	88.29
Ethane	2.11
Propane	0.64
i-Butane	0.03
n-Butane	0.07
i-Pentane	0.04

Parameter	Annie Field
n-Pentane	0.04
Hexane	0.11
Heptane	0.08
Octane	0.03
Nonane	0.02
Decane	0.01
Undecane	0.01
Dodecane+	0.03
TOTAL	99.99
Mercury	1-4 µg/m^3
Naturally Occurring Radioactive Material (NORMS)	-

3.4 Description of Activities

The scope of this EP covers the development drilling of the Annie-2 well (

Figure 3-2). A summary of key activities is provided in Table 3-4.

Table 3-4: Key Activities of Annie-2 Development

Key Activities	Description
General Details	
Activity Window	5 years or until tie-in to CHN pipeline and commissioning.
Pre-lay mooring operations	14 – 20 days, as early as Q2 2026 (ahead of MODU arrival)
Mooring Connection	5-7 days
Well Construction: • well drilling and well completions • subsea tree installation • BOP installation and testing • cementing operations • well clean-up and flowback • well shut-in and suspension.	60 days. as early as
Mooring Disconnect and mooring removal	5 – 7 days (MODU disconnect) 14-20 days mooring removal
Intervention	60 days (including pre lay moorings)
Ongoing well management (shut in)	5 years or until tie into CHN pipeline and commissioning
Abandonment	30 days
Operational Activities	
MODU type	Semi-submersible MODU

Key Activities	Description
Vessel Type	Offshore multi-purpose Anchor handling
No of vessels in field	One to four vessels at any one time
ROV	Yes
Helicopters	Yes
Drilling & Completion Activities	
Number of wells	Single well
Estimated drilling activity duration	60 days
Drilling Fluid Type	Water based drilling fluids
Well flowback	Yes
Well re-spud/ sidetrack	Operational Contingency
Well abandonment	Operational Contingency
Environmental survey	Operational Contingency (7-21 days)
Ongoing Well Management	
Vessel-based activities	Short-term duration (2-7 days) Planned for annual inspection
Well Abandonment	Contingency in event Annie-2 well is not tied into the CHN pipeline

Note: MODUs operate across a global market and are contracted depending on the levels of work available. The MODU for this activity will either sail under its own power or be towed by support vessels to the Otway region. The metocean conditions and unique seabed in the operational area necessitates the use of a moored semi-submersible MODU.

3.4.1 Mooring Operations

MODUs will typically require between 8 and 12 anchors to maintain position during development drilling. Anchors are spread in a radial pattern extending from the MODU. The anchors may be pre-laid on the seabed several weeks in advance of the MODU arriving at the well location. Anchor pre-lays will be located within the near vicinity of the planned well location. These anchors and associated mooring wires / chains are deployed to the seabed by the AHTSs.

Transponders may be attached to temporary subsea equipment or placed on the seabed. On completion of the positioning operations, transponders and associated equipment will be removed.

The size of the anchor spread will be dependent on the MODU and the MODU specific mooring analysis conducted during the well planning stage. Typically, mooring lines extend ~1,500 – 2,500 m from the MODU, with ~1,200 m of grounded chain. Each anchor itself typically occupies a total seabed of ~60 m^2. The method for retrieval of anchors is the reverse of the deployment procedures. The potential area of seabed disturbance is described in Table 3-5. Typically mooring pre-lay and retrieval activities will each take 14 to 20 days pending metocean conditions.

The ‘wet storage’ of mooring chains may occur within the operational area for the duration of the activities. The planning of the placement considering seabed relief, substrate and hazards is informed by the geophysical seabed survey.

3.4.2 MODU Positioning

Once in the region, the MODU may move into position under its own propulsion or be towed by one anchor handler tug supply vessel (AHTS) before being moored. An additional 2 AHTS vessels may be within the operational area (3 km from the MODU over well centre) to provide assistance with MODU mooring activities.

Once the MODU is in position, the AHTSs will connect the mooring lines from anchors on the seabed, to the MODU, and the lines are tensioned by winches to a pre-determined tension value. MODU positioning takes between 5 to 7 days pending metocean conditions.

Table 3-5 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-5: Impact Assessment Technical Input – MODU Positioning

Requirements for Impact Assessment	Technical Input
Exclusion / cautionary zone	3.5 km radius around the MODU
Seabed disturbance footprint (temporary)	<2 m^2 of transponders
	~60 m^2 per anchor
	~1,200 m of grounded chain
	<1 km^2 of 'wet storage'

3.4.3 Well Construction Activities

Well construction activities, including development drilling, running completions, and shut-in could range between 45 to 60 days. For the purposes of impact assessment, a conservative value of 60 days for development drilling has been used to account for unexpected delays and extreme weather events.

Well construction is planned to be undertaken at any time of year. Timing flexibility is necessary due to a myriad of factors that can influence MODU availability and operational progress. The MODU for this activity is expected to undertake a series of sequential well activities for multiple operators in the region, including decommissioning and drilling.

The final well design for this activity is subject to detailed well engineering. The Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011 requires that detailed well design and management is approved by NOPSEMA before drilling can commence. This is completed through the development and assessment of a detailed Well Operations Management Plan (WOMP) submitted to NOPSEMA.

3.4.3.1 Drilling Operations

Once the MODU is positioned over the well location, drilling equipment is lowered to the seabed and drilling commences with the top-hole section. The top-hole sections of the well (conductor and surface hole) are drilled without a riser system to the MODU which this is standard practice prior to BOP installation.

As each section of the well is progressively drilled, steel casing is installed into the hole. The well may be suspended to allow for evaluation of the field, as described in Section 3.4.3.8.

Once the conductor (with the low-pressure wellhead housing) and surface casing (with high-pressure wellhead housing) are installed, a drill-through SST will be installed and tested on the well (required for barrier purposes and regulation of flow). The SST is a set of valves, spools, and fittings connected

to the top of a well. Whilst the well is in a suspended state, the SST acts as barrier to the flow of formation fluids from the well.

A temporary 3.5 km exclusion / cautionary zone will be requested around the MODU during drilling activities; mariners will be notified via a Notice to Mariners issued fortnightly by the Australian Hydrographic Service.

Table 3-6 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-6: Impact Assessment Technical Input – Drilling Operations

Requirements for Impact Assessment	Technical Input
Exclusion / cautionary zone	3.5 km radius around the MODU.
Petroleum Safety Zone (PSZ)	500 m radius around well gazetted by NOPSEMA.
Seabed disturbance footprint	Approximately 1 m^2 for top-hole.
Underwater sound emissions from drilling (i.e., rotating pipe)	Continuous; relatively low noise levels which may vary with environmental conditions, drilling depth, and operating requirements. See scenarios outlined in Section 6.6.

3.4.3.2 Drilling Cuttings and Fluids

Drilling fluids, sometimes called drilling muds, are a specialist mix of seawater, clay (or gel) and weighting additives such as barite, salt and chalk. Drilling fluids perform several functions, including cooling and lubricating the drill bit, transporting drill cuttings to the surface, and maintaining hydrostatic pressure greater than formation pressure, thereby preventing the influx of hydrocarbons from the formation into the wellbore.

Standard additives to the drilling fluids include polymer and polyamine to control fluid loss, viscosity and stabilise shales during the drilling process. The specific type and mix of drilling fluids will depend on the final proposed design and drilling requirements encountered on site. No synthetic based mud (SBM) will be used for drilling Annie-2.

During drilling of the conductor and top-hole sections, a combination of seawater and high-viscosity gel sweeps are typically used as drilling fluid. Subsequent intermediate and reservoir hole sections will typically be drilled with water-based mud (WBM), with specific formulations dependent on the technical requirements of the well. The cuttings (rock chips) and drilling fluids from the surface sections of the well are released at the seabed.

During drilling of the lower sections of the well, including reservoir sections, a riser system is installed on top of the well. The riser is a conduit between the well and the MODU. The drilling equipment is re-run into the well through the riser and the drilling process continues. The riser system helps to maintain drilling fluid balance within the well as pressures increase with well depth. Integrated into the riser system are a series of barrier elements which can seal the well if required (Section 3.4.3.8).

When the riser is in place, drilling fluids pumped into the well, and cuttings from the well are circulated up the riser to the MODU where the cuttings are separated from the drilling fluids. The solids control equipment comprises of shale shakers that remove coarse cuttings from drilling fluids. The recovered fluids that are separated from the cuttings may be directed to centrifuges to remove the finer solids. The cuttings are usually discharged back to seabed below the water line and the reconditioned fluids are recirculated into the fluid system. The drilling fluids are ultimately discharged once they have reached the end of their operational life.

Drilling fluids, bulk dry products, brine and drill water are transferred to the MODU from supply vessels and stored in tanks and pits. Dry and liquid additives are mixed into the fluid system from sacks or containers. The specific type and mix of drilling fluid will depend on the final proposed design and drilling requirements encountered on site.

Table 3-7 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-7: Impact Assessment Technical Input - Drill Cuttings and Fluids

Requirements for Impact Assessment	Technical Input
Discharge of drill cuttings and fluids at seabed (top-hole drilling).	• 150 m^3 of drill cuttings. • 1,500 m^3 of associated drill fluids. Typical discharges in batches of between 10-100 m^3.
Discharge of drill cuttings and fluids at surface (bottom-hole drilling).	• 180 m^3 of drill cuttings. • 2,000 m^3 of associated drill fluids. Typical discharges in batches of between 10-100 m^3.
Seabed disturbance footprint of drilling cuttings	~ 200 m radius around the well (based on analogue studies detailed in Section 6.0).

3.4.3.3 Cementing Operations

Cement is used throughout the well construction process during installation of each well section to seal the casing into place. Cement can also be used in the form of a cement plug within the well to provide a permanent or temporary well barrier.

Bulk dry cement is transported to the MODU via supply vessels and transferred to dry bulk storage tanks. During the transfer process, to avoid over-pressuring the holding tanks, the tanks are vented to the atmosphere, resulting in residual dry cement being discharged from venting pipes located under the MODU.

After a string of casing or liner has been installed into the well, a cementing spacer is pumped to flush drilling fluids from the well. Cement slurry is pumped down the inside of the well, and into the annulus (space between the casing and surrounding rock). The cement is pushed into the well by fluid and a wiper plug which displaces the cement out of the bottom of the casing and up into the annular space between the pipe and the borehole wall. Cement volume excess will depend on the cement job design requirements, drilled hole size and size of casing; typically for the conductor and surface casing strings the bulk of the excess will be discharged to the seabed.

If there are mixed batches of cement spoil within the cementing unit, or if there is a problem during the cementing operation, cement slurry will be either flushed from the cement unit or circulated out of the well and discharged to sea.

The cementing unit is tested prior to the commencement of cementing operations, resulting in a discharge of cement slurry to sea. Upon completion of each cementing activity, the cementing head and blending tanks are cleaned which also results in a release of cement washings to sea.

Table 3-8 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-8: Impact Assessment Technical Input - Cementing Operations

Requirements for Impact Assessment	Technical Input
Discharge volumes of cement on testing	2.4 to 8 m^3 at surface

Requirements for Impact Assessment	Technical Input
Discharge volumes of cement on disposal of slurry job excess	Up to 40 m^3
Discharge volumes of cement due to job excess	Up to 50 m^3 pumped to seabed
Discharge volume of spacer displaced	~8 m^3 to seabed
Unused bulk discharge of cement (disposed as a slurry)	Up to 50 m^3 at surface
Discharge volumes of cement during cleaning	<1 m^3 per cement job at surface
Direct seabed disturbance footprint of 'overflow' cement	10 m – 50 m around the well

3.4.3.4 BOP Installation and Testing

The riser and blowout preventer (BOP) are installed to facilitate the drilling of the deeper well sections once the surface casing is cemented in place. The riser and BOP can also be installed on top of the SST depending on activity sequencing. The BOP is comprised of a series of hydraulically operated valves and sealing mechanisms (annular preventers, pipe rams and blind shear rams) that are normally open to allow the drill fluid to circulate up the marine riser to the MODU during drilling.

The BOP acts as a secondary barrier and is used to "close in the well" in the event of an unwanted influx into the wellbore. Once closed, the MODU's high-pressure circulating system is used to remove the influx from the well and regain hydrostatic overbalance. The annular and ram preventers are used to shut in around various tubulars in the well, while the blind shear rams are designed to shear the pipe and seal the well.

When the BOP is installed, regular function and pressure tests are undertaken as per relevant standards, described in the WOMP. Function testing is undertaken by activating the hydraulic control system onboard the MODU to confirm functionality of the BOP systems, whilst a pressure test is undertaken to verify seals on the BOP stack. Both tests result in the discharge of control / test fluid.

Once well construction is complete, the BOP is replaced by long-term barriers integrated into the well and the BOP is recovered to the MODU.

Table 3-9 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-9: Impact Assessment Technical Input - BOP Installation and Testing

Requirements for Impact Assessment	Technical Input
Frequency of BOP function testing	Function tests every 7 days (typically). Pressure tests every 21 days (typically).
Discharge volume from function testing.	Total ~2.5 m^3 control fluid and test fluid to seabed.

3.4.3.5 Well Completions

Completions will be installed as part of the well. This will enable future use of the well pending regulatory approvals and licencing for production activities.

Completions involve running components into the well, optimising the flow path and minimising the ingress of sand from the reservoir. Displacing spent drilling fluids to filtered brine is also necessary as part of the completion's installation.

The well bore will be cleaned and displaced to filtered brine when installing completions to minimise solids within the wellbore. Returned fluids will be re-used where they are assessed as suitable for future use. Fluids that are not suitable for reuse are directed overboard to sea.

Prior to setting the packers, the tubing annulus is displaced to corrosion inhibited completion brine (e.g., sodium chloride) which will remain in the well. The tubing contents may be displaced to a base oil (~40 m^3) ready for well clean-up and testing. Note, base oil is only introduced to the well after the well is circulated to completion brine and the completion is installed. The base oil does not form a component of the drilling mud (which is water-based) but is used to underbalance the well to initiate flowback and is flared in its entirety during the well clean-up and test.

Completion brines may be sodium chloride (NaCl), or potassium chloride (KCl) treated with biocide and oxygen scavenger components and will be released during this activity.

Table 3-10 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-10: Impact Assessment Technical Input - Well Completions

Requirements for Impact Assessment	Technical Input
Discharge volume of solids free drilling fluids (water-based)	120 m^3 to surface.
Discharge volume of viscous cleaning fluids (water-based) to the surface	10 m^3 to surface.
Discharge volume of filtered inhibited completion brine (e.g., sodium chloride)	220 m^3 to surface.
Displaced volume of base oil (e.g., Saraline 185V).	40 m^3 burned at the flare during well clean-up.
Note: inhibitors typically include biocide, oxygen scavenger, corrosion inhibitor. Fluid displacements are discharged in the order of 10-50 m^3 per batch.	

3.4.3.6 Well Clean-up / Flowback

Following completion of the well, well testing and clean-up will be undertaken to ensure the well is cleared of drilling fluids and brines and to then enable capture of data on the pressure, flow and composition of the reservoir. Base oil acts to underbalance the well and initiate flow from the well to the MODU, controlled via valves within the well, SST, and BOP stack-up. The base oil and reservoir fluids are directed to a flare boom, via a surface well test package. Flow from the well continues until the well clean-up criteria are met (e.g., completion fluids have been removed and residual solids are nominally <2%).

Whilst the well is flowing through the separator, samples of gas and /or liquid will be captured for laboratory analysis. Onsite analysis is also performed for non-hydrocarbons such as H_2S, CO_2, radon and mercury.

Table 3-11 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-11: Impact Assessment Technical Input - Well Clean-up / Flowback

Requirements for Impact Assessment	Technical Input
Duration of flaring	36 hours
Maximum flowrate	60 MMscf
Flare boom height	11-15 m above sea level
Volume of base oil	40 m^3 flared

Requirements for Impact Assessment	Technical Input
Volume of completion brine / liquids in test separator	1 m^3 flared
Volume of methanol (for hydrate inhibition)	3 L / min injected / flared
Volume of viscous cleaning fluids (water-based)	10 m^3
Volume of gas (during sampling)	20 L vented per sample
Approx. volume of CO^2 emissions	6.7 kt CO_2-e

3.4.3.7 Logging

During well construction, it is necessary to gather formation information for ongoing drilling operations to inform the effective recovery of hydrocarbons from the reservoir. This information is gathered real-time from Logging Whilst Drilling (LWD) tools.

Wireline logs may be considered as a contingency to gather data if deemed necessary.

Table 3-12 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-12: Impact Assessment Technical Input – Well Shut-in and Suspension

Requirements for Impact Assessment	Technical Input
Underwater sound emission from logging	Noise from logging activities is not anticipated to be audible within the overlying ocean.

3.4.3.8 Well Shut-in and Suspension

Following completion and well-test activities. The BOP and riser will be removed, and the well will be left with the SSTs installed and the well shut-in. To be 'shut-in' means the well barriers are closed, preventing the flow of hydrocarbons out of the well. Prior to this well shut-in, the well and SST barriers will be tested, and test fluids may be flushed to sea (e.g., MEG treated with corrosion inhibitor).

An internal tree cap, crown plugs and debris cap are run, and a small volume of treated fluid is typically pumped beneath the debris cap.

3.4.3.9 Contingencies

Environmental Surveys

Environmental surveys may be required within the operational area to support the Activity.

Techniques that may be used include:

- seabed sampling with Van Veen Grab or alternative
- water sampling
- acoustic monitoring
- visual data collection with ROV or drop camera.

Surveys would be expected to occur within the operational area. Each survey could take up to 7 to 21 days to complete. These surveys may employ a variety of techniques and activities, including:

- Multi-beam echo sounder (MBES) - detailed measurements of bathymetry in the operational area.
- Side Scan Sonar (SSS) - detects hazards such as existing pipelines, lost shipping containers, boulders, debris, unmarked wrecks, reefs and craters. Also used to help detect possible cultural heritage.
- Sub-bottom Profiler (SBP) – used to investigate the layering and thickness of the uppermost seabed sediments to check for shallow hazards and anomalies.
- Ultra-Short Baseline (USB) - sends / receives and interprets signals in real time to establish precise locations of equipment and vessels.
- Magnetometer - detects metallic objects on or below the seabed (e.g. buried pipelines, petroleum wellheads, shipwreck debris and dropped objects such as un-exploded ordinance, cables, anchors, chains) that may not be identifiable only by acoustic means.
- Sound Velocity Profiler (SVP) and Conductivity, Temperature and Depth (CTD) sensors – used to calibrate survey and environmental monitoring equipment.

Table 3-13 summarises the technical inputs used in the impact assessments within Section 6.0.

The predicted frequencies included within Table 3-13 are considered appropriate for the Activity as they represent typical and widely used survey equipment model types. See further discussion of the noise level exposures used in Section 6.5.

Table 3-13: Impact Assessment Technical Input - Environmental Surveys

Requirements for Impact Assessment	Technical Input
Exclusion / cautionary zone	3.5 km radius around the MODU.
Petroleum Safety Zone (PSZ)	500 m radius around well gazetted by NOPSEMA.
Seabed disturbance footprint	Approximately 0.20 km^2. Refer Section 6.3.2 for further detail.
Underwater sound emissions	Impulsive; noise levels may vary with environmental conditions and operating requirements, within defined safety parameters. See Section 6.5 for further detail.

Well Abandonment

Well abandonment activities are undertaken to seal off the reservoir section of the well and eliminate the risk of a potential release of reservoir fluids to sea.

In the unlikely event the Annie-2 well does not intersect commercial columns of gas following drilling and evaluation then it will be permanently P&A'd at well Total Depth (TD), prior to the rig departing the location.

Similarly in the unlikely event the shut in Annie-2 well is not tied-in for future production, the well will be permanently abandoned within 3 years or as per the accepted governing WOMP. The tie-in of the Annie-2 development well via flowline to the CHN pipeline is not within the scope of this EP, and subject to the ECSP Subsea Installations EP. In the event that either of these well abandonment operations are required, they will occur within the term of this EP.

Activities during the well abandonment process may include:

- Install permanent reservoir barriers as required.

- Disconnect and remove SST (where applicable).
- Remove pressure control equipment (BOP).
- Cut and remove wellhead.

Well abandonment operations involve setting a series of cement plugs within the wellbore, including plugs above and between any hydrocarbon bearing intervals, at appropriate depths in the well. These plugs are tested to confirm their integrity.

Cutting and removal of wellheads is common in areas where their presence may be a hazard to other marine users. The base case will be to cut at or below the seabed and recover wellheads to a vessel, however if a wellhead is cemented beyond the cutting tool limits, the wellhead may be left in-situ subject to regulatory approval. The method for installation and appraisal of the barriers for abandonment will be the same regardless of whether the wellhead remains in place or not.

All P&A operations will be conducted in accordance with relevant standards, as detailed within a NOPSEMA-accepted WOMP.

Table 3-14 details the indicative drilling cuttings and fluid volumes used in the impact assessment.

Table 3-14: Impact Assessment Technical Input – Well Abandonment

Requirements for Impact Assessment	Technical Input
Discharge volumes of cement	Up to 8 m^3 at surface

3.4.4 Well Integrity Monitoring

Once the well has been shut-in and suspended, they will be inspected via well integrity monitoring campaigns in accordance with a NOPSEMA accepted WOMP. Inspections are anticipated to occur annually, or otherwise as informed by review of well data captured during the well construction program.

Typically, a survey vessel will be within the operational area for between 2 to 7 days per year for well integrity monitoring of the shut-in well.

The monitoring will include:

- Visual monitoring – undertaken using an ROV or AUV deployed from a vessel for visual and sonar survey. ROV shall be utilised to obtain visual and instrumental (where applicable) data at the wellhead / SST and immediate surrounding area to confirm well barrier integrity to the environment and to monitor general condition of the well.
- Non-destructive testing – includes ultrasonic testing and electrical resistance testing, which are typically undertaken using an ROV or AUV deployed from a vessel. This type of testing may be performed to validate the results of other inspection techniques.

3.4.5 Support Activities

Support activities associated with the scope of the Activity are likely to include a MODU, vessels, helicopters and ROVs or AUVs, and are specific to each phase (Table 3-15).

Table 3-15: Support Activities for each Phase

Support Activity		Phase		
		Surveys		Well Construction
		Environmental Surveys	Well Integrity Monitoring	
MODU				✓
Support Vessels	**Survey Vessels**	✓	✓	
	AHTS			✓
Helicopter				✓
ROV/AUV		✓	✓	✓

3.4.5.1 MODU Operations

Well construction will be carried out using a semisubmersible rig referred to as a MODU (as described in Section). The MODU may be brought in from overseas or from within Australian waters depending on the levels of well activity elsewhere within the Australian offshore industry.

The metocean conditions within the offshore Otway region have the potential to preclude setting a jack-up MODU on location for up to 90% of the year and have an increased risk of 'punch through' of jack-up legs through the surficial calcarenite rock which is characteristic of the region. Therefore, a moored MODU (or dynamic positioning (DP) assist moored MODU) has been selected as the feasible and proven option for the Activity.

The MODU is fitted with various equipment to support activities including:

- pressure control equipment capable of sealing the well (such as a BOP)
- derrick with rotating equipment and drill pipe
- wireline unit for well logging
- flowback package providing flaring capability
- cement unit
- work class ROV
- mooring system (possible DP assist)
- power generation systems
- cooling water and freshwater systems
- drainage, effluent and waste systems
- bulk storage tanks for cement and weighting agents
- sack room for storage of drilling fluid additives
- mud pits (tanks to store and maintain drilling fluids) – in the order of 1000 m^3 combined capacity
- solids control equipment used in drilling to separate the solids and drilling fluids (this may include shale shakers, centrifuging systems and cuttings driers).

Non-drilling activities occurring on the MODU include:

- bunkering / bulk transfer of fuel, chemicals, and supplies
- transfer of waste to supply vessels
- discharge of:
  - sewage and greywater
  - cooling water and reverse osmosis (RO) brine
  - deck drainage and bilge.

Refuelling of the MODU and bunkering will be required during the activity and will occur offshore. Bunkering and bulk transfer will be managed by the MODU.

The MODU will be temporarily moored to the seabed and may be equipped with DP systems for positioning assistance during harsh weather events and for safe operations. When connected to the seabed (via wellhead/XT and a marine riser above the BOPs), a "watch circle" is implemented, which dictates the amount off offset from well centre (at seabed) is allowable before a risk to well operations and safety (riser angle exceeding a limit off vertical which may induce component failure) is to occur. This watch circle is implemented regardless of the positioning system being used, but for Annie-2 development well it will be maintained under normal operations via the mooring lines connecting the MODU to the anchors. DP positioning may be utilised in an emergency station keeping scenario (i.e. mooring failure) or during approach to location and mooring hook-up, where watch circle criticality is lessened.

Table 3-16 details the anticipated MODU specifications and capacities for the Activity and Table 3-17 outlines the technical input that will be used in the impact assessment within Section 6.0.

Table 3-16: MODU Specifications and Capacities

Technical Specifications	
Vessel type	Typically, semi-submersible
Size	Length 120 m, Width 120 m
Maximum persons on board (POB)	140 to 200
Station keeping	Moored (8-12 anchors) DP assist (transit, emergency prevention)
Helideck	Yes
Flare boom height	11-15 m above sea level
Fuel type	MDO / MGO
Fuel storage capacity	1,100 m^3
Operational Specifications	
Lighting requirements	Standard navigation lighting and safe work
Bilge requirements	Standard bilge requirements
Sewage requirements	MARPOL compliant sewage treatment system

Technical Specifications	
Hazardous materials storage	Yes
Ballast water discharge or exchange within territorial sea boundary?	Yes Per IMO and Australian requirements as applicable to age and class

Table 3-17: Impact Assessment Technical Input - MODU Operations

Requirements for impact assessment	Technical input
Safety exclusion zone	Temporary 500 m radius around the MODU establish via a 'Notice to Mariners'
Planned marine discharges from the vessels.	Discharges in accordance with MARPOL and AMSA discharge standards for the duration of activities. Discharges will include sewage and grey water, cooling water, brine and treated ballast, deck drainage and bilge.
Operational light emissions from MODU	~20 km precautionary light buffer.
Underwater Sound emissions from drilling and DP system/thrusters.	Continuous; relatively low noise levels which may vary with environmental conditions, drilling depth, and operating requirements. See scenarios outlined in Section 6.6.
Approximate atmospheric emissions (CO_2-e) from: Fuel use / power generation Embedded materials (steel / concrete).	4.8 kT CO_2-e

3.4.5.2 Vessels Operations

Activities associated with the activities covered within this EP will be supported by various vessels. Vessels may be contracted from international or Australian suppliers and will vary depending on the proposed activity, phase and vessel availability. The expected vessel types include:

- survey vessels
- AHTS
- Activities associated with these vessels include:
- conducting site surveys
- MODU positioning
- mooring installation
- bunkering and bulk transfer of fuel, chemicals and supplies to the MODU
- collection and potentially treatment of waste from the MODU
- assisting in emergency response situations
- monitoring the 500 m safety exclusion zone
- monitoring well integrity.

Operational activities associated with vessels include:

- discharge / management of:
  - sewage, greywater and food waste
  - cooling water and brine
  - deck drainage and bilge
  - ballast water discharge or exchange.

All vessels will initially mobilise and demobilise at ports outside of the operational area. Crew changes for the vessels will typically be conducted at local ports outside of the operational area.

Three vessels (AHTSs) wills be used to assist the MODU whilst positioning. The AHTSs are involved in towing the MODU, moorings, material transfers and emergency standby and support. Once the MODU is in position, 2 AHTSs will remain within the operational area to support, whilst the third vessel undertakes resupply. A maximum of 3 AHTSs will be within the operational area at any one time whilst well construction is being undertaken. The support vessels will remain outside of the PSZ, unless undertaking operational activities

Vessels will typically use thrusters or DP to maintain position but may deploy anchors to manage an emergency situation (such as engine failure).

Interim vessel transiting to and from the operational area is managed under the Commonwealth Navigation Act 2012 and this activity is excluded from the scope of the EP.

Table 3-18 details the anticipated vessel specifications and capacities for the activity and Table 3-19 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-18: Vessel Operations Specifications and Capacities

Technical Specifications	
Maximum Persons on Board (POB)	Survey vessel: 20-40 AHTS: 20-60
Will vessels be moving within the operational area?	Yes
Will anchoring be required?	Anchoring may be required where it is too shallow to use vessel's DP mode (e.g., small vessel close to shore in state waters).
Lighting requirements	Standard navigation lighting and safe work.
Bilge requirements	Standard bilge requirements.
Cooling water and brine requirements	Standard cooling water and brine requirements.
Sewage requirements	MARPOL compliant sewage treatment system.
Hazardous waste	Yes
Ballast water discharge or exchange within territorial sea boundary?	Yes
Fuel use type	Marine Diesel Oil (MDO) or Marine Gas Oil (MGO)
Estimated fuel consumption (daily)	15 - 20 m^3 per day.
Is refuelling at sea planned?	No
What is the largest expected MDO tank size?	250 m^3
Ancillary equipment may include	Cranes, A-Frame, ROVs, Positioning and Survey equipment.

Table 3-19: Impact Assessment Technical Input - Vessel Operations

Requirements for impact assessment	Technical input
Seabed disturbance footprint (not planned)	1,300 m^2 during emergency anchoring (accounting for deployment and some drag in heavy weather) (NERA, 2018).
Planned marine discharges from the vessels.	Discharges will be in accordance with MARPOL and AMSA discharge standards. Discharges will include sewage and grey water, cooling water, brine and treated ballast, deck drainage and bilge.
Operational light emissions from vessels	~20 km precautionary light buffer.
Underwater sound emissions (from DP system / thrusters)	Continuous; noise levels may vary with environmental conditions and operating requirements, within defined safety parameters. See scenarios outlined in Section 6.6.
Atmospheric emissions	12.9 kT CO_2-e

3.4.5.3 Helicopter Operations

Helicopters will be used during the drilling activities, primarily for crew change, in the event of medevac, and occasionally equipment and material transfers. Frequency will depend on the progress of the drilling program and logistical constraints.

Table 3-20 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-20: Impact Assessment Technical Input: Helicopter Operations

Requirements for impact assessment	Technical input
Frequency of flights	Approximately 5-8 round trips per week.
Underwater sound emissions	Continuous sound emissions: Level limited to tens of metres from the source when at lower altitudes for landing/take-off at the MODU (Richardson et al. 1995).
Approximate GHG emissions (CO_2-e) from fuel use during offshore crew changes	0.2 kT CO_2-e

3.4.5.4 ROV / AUV Operations

Inspection and / or work-class ROVs are required for well monitoring activities (AUVs may also be used). A ROV is a tethered underwater vehicle operated by a crew aboard the vessel or MODU. They are linked by either a neutrally buoyant tether or often when working in rough conditions, deeper water or with large payloads, a load carrying umbilical cable is used along with a tether management system. An AUV is an untethered underwater vehicle operated in a similar manner to an ROV.

ROVs are equipped with a video camera and lights. ROVs may utilise electric control systems or closed loop hydraulic control systems. Additional equipment may include positioning and survey equipment, and various apparatus to support installation and monitoring activities. ROVs may utilise electric control system or a closed loop hydraulic control system.

ROVs may be required to park temporarily on the seabed as part of execution activities. Any such temporary parking will occur within the operational area.

Table 3-21 summarises the technical inputs used in the impact assessments within Section 6.0.

Table 3-21: Impact Assessment Technical Input - ROV / AUV Operations

Requirements for impact assessment	Technical input
Discharge volume of control fluids (during well integrity testing activities)	~10 L at the seabed.
Discharge volume of calcium wash (citric acid or equivalent) when calcium deposits are required to be cleaned from the ROV interface	50 L at the seabed.
Underwater sound emissions (from USBL)	A USBL system uses transponders to receive the acoustic signal sent out by the system's transceiver. See Section 6.5.
Disturbance footprint	'Wet parking' not planned. ~10 m^2 if it is required (i.e., emergency).

3.4.6 Decommissioning

Amplitude Energy acknowledges the requirement through Section 572 of the OPGGS Act and NOPSEMA Policy Section 572 Maintenance and Removal of Property (N-00500-PL1903, A720369, December 2022) for removal of all property when it is no longer in use, or to be used, and that any deviations from this position will need to be evaluated and accepted by NOPSEMA.

Amplitude Energy acknowledges the targets set in NOPSEMA's Decommissioning Compliance Strategy 2024-2029 for decommissioning planning (NOPSEMA 2024b). Current regulatory expectation is that:

- If Annie-2 development well does not access a commercially viable resource following well testing, it will be abandoned at the time of well evaluation and within the well activity duration of this EP.
- Annie-2 development well will be permanently abandoned within 3 years in the event the well is not tied into the existing CHN pipeline, or as accepted in the governing WOMP where integrity can be demonstrated as per regular inspection and/ or monitoring activities.
- Annie-2 will be permanently abandoned within 3 years of permanently ceasing production or as accepted in the governing WOMP where integrity can be demonstrated as per regular inspection and/ or monitoring activities.

This EP has provided for a contingency case to P&A the well, as per Section 3.4.3.9, in the unlikely event that the well is not able to be utilised for development.

Operational monitoring programs described in this EP are suitable to the nature and scale of the activities and the environment and will help to facilitate Section 270 Title relinquishment if required in the future. The Annie-2 development well decommissioning strategy will be outlined and complied with as part of the CHN Development EP, which will be revised to include for production from the Annie-2 development well.

4.0 Description of the Environment

A detailed description of the environment is provided in Appendix 4 - for all physical, ecological, social and cultural receptors. This section provides regulatory context, a description of the environment that relevant to the project activities (and unlikely emergency scenarios), regional setting and a summary of the key ecological and social receptors.

4.1 Regulatory Context

The OPGGS(E)R 2023 defines 'environment' as 'ecosystems and their constituent parts, natural and physical resources, the qualities and the characteristics of locations, places and areas, and the heritage value of places; and includes the social, economic and cultural features of those matters'.

In accordance with Section 21(2) of the OPGGS(E)R, this section (and associated appendices) describes the physical setting, ecological receptors, and social receptors, of the receiving environment relevant to the described activity.

A greater level of detail is provided for certain receptors, as defined by Section 21(3) of the OPGGS(E)R which states that particular relevant values and sensitivities may include any of the following:

- The world heritage values of a declared World Heritage property.
- The National Heritage values of a National Heritage place.
- The ecological character of a declared Ramsar wetland.
- The presence of a listed threatened species or listed threatened ecological community (TEC).
- The presence of a listed migratory species.
- Any values and sensitivities that exist in, or in relation to, part or all of:
  - A Commonwealth Marine Area (CMA); or
  - A Commonwealth land.

With regards to 21(3)(d) and (e) more detail has been provided where threatened or migratory species have a spatially defined biologically important area (BIA) – as they are spatially defined areas where aggregations of individuals of a regionally significant species may display biologically important behaviours such as breeding, foraging, resting or migration (DCCEEW 2024a).

BIAs can be located anywhere within the Australian marine environment and may also be designated over terrestrial areas (i.e., turtle nesting beaches). BIAs are:

- Designed to inform decision making about actions which may impact protected species.
- Described in conservation plans for protected marine species including statutory recovery plans, wildlife conservation plans, and conservation advice documents (DCCEEW 2024a).
- It is important to note that BIAs do not represent the species full range and that areas without BIAs may still support biologically important behaviours (DCCEEW 2024a).

BIAs within this document have been described and defined by using the downloadable DCCEEW BIA shapefile dataset available at this time (DCCEEW 2024a). Further updates to BIA's will be reviewed as they become available and will be integrated into the EP either during or after assessment, in accordance with Amplitude Energy's Management of Change process.

With regards to 21(3)(f) more detail has been provided for:

- Key Ecological Features (KEFs) as they are considered a conservation value under a CMA.
- Australian Marine Parks (AMPs) as they are established under the EPBC Act.
- Important habitat for migratory species is defined within the Matters of National Environmental Significance Significant Impact Guidelines 1.1 (DEWHA 2013) as:
  - habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species, and/or
  - habitat that is of critical importance to the species at particular life-cycle stages, and/or
  - habitat utilised by a migratory species which is at the limit of the species range, and/or
  - habitat within an area where the species is declining.

4.2 Environment that May Be Affected

The spatial extents associated with the operational area, Environment that May be Affected (EMBA), and monitoring area are used to inform the environmental context relevant to the activity and to support the impact and risk assessments (Table 4-1).

Table 4-1: Description of Operational Area, Monitoring Area and EMBA

Activity Area	Description
Operational area	The operational area is: • 3 km buffer around the Annie-2 well location. Planned seabed disturbance, drilling and operational discharges, and physical presence will occur within the operational area. The EPBC PMST report for the operational area is available in Appendix 5 -
EMBA	The EMBA (Figure 4-1) is the largest spatial extent where unplanned events could have an environmental consequence on the surrounding environment. For this EP the EMBA is the combined potential spatial extent of surface and in-water hydrocarbons at concentrations above ecological impact thresholds in the unlikely event of Level 2 or 3 hydrocarbon spill to sea (see Section 6.8 and Table 6-50). The hydrocarbon exposure thresholds that define the outer limits of the EMBA are: • Surface – 10 g/m^2 • Shoreline – 100 g/m^2 • In-water (dissolved) – 50 ppb • In-water (entrained) – 100 ppb The EMBA does not represent the predicted coverage of any one hydrocarbon spill or does it depict a single plume at any given point in time. Rather, the EMBA is a composite of multiple spill scenarios over a large number of theoretical scenarios with differing metocean conditions. The potential impacts and risks within the EMBA are described in Section 6.8 and are not homogenous; they vary in consequence. Generally, the potential consequences would diminish with distance from the spill source, and the probability of an impact, which is highly unlikely in the first instance, becomes less likely still, with distance from the spill source out to the edge of the EMBA.
Extent of socio-economic impacts	The extent of potential socio-economic impact (SEI) is used to identify receptors which have the potential to be subject to visual or economic impacts associated with an accidental release of hydrocarbons. Relevant social receptors are detailed between Section 4.4.3 and Section 4.4.4. Social receptors are assessed based on the hydrocarbon exposure threshold that could result in a visual sheen or exceedance of water quality

Activity Area	Description
	guidelines and are considered an indicator of possible socio-economic impacts within the marine and coastal environment. The boundary of the extent has been defined by an accidental release of condensate. A low threshold exposure value for visible oil types (floating and shoreline) and a moderate threshold exposure value for in-water oil types were used to define the spatial extent. • Floating (1 g/m^2) • Shoreline (10 g/m^2) • In-water: Dissolved (50 ppb) and Entrained (100 ppb). The potential socio-economic impacts of a spill are described and assessed in Section 6.8. Generally, the potential consequences would be expected to diminish with distance from the spill source, and the probability of an impact, which is highly unlikely in the first instance, is remote within the monitoring area beyond the EMBA.
Monitoring area	Hydrocarbons can be monitored to concentrations much lower than the thresholds of ecological effect. It can be important to do this in the event of a spill, even in areas that are remote from the activity, to confirm the presence / absence of hydrocarbons and concentrations relative to water quality parameters which may have socioeconomic implications. The (Low) hydrocarbon exposure thresholds that define the outer limits of the Monitoring Area are described in Table 6-50. The Operational and Scientific Monitoring Plan (OSMP) for the Activity provides for monitoring of low hydrocarbon exposures and areas remote from the activity. The monitoring area is utilised in determining the geospatial extent of the existing environment relevant to the EP, and supports the identification of physical, ecological and social receptors which are de*scri*bed in Section 4.0. Analysis of the stochastic modelling results (Appendix 6 -) shows the monitoring area overlaps 10 IMCRA provincial bioregions: • Western Bass Strait Shelf Transition • West Tasmania Transition • Bass Strait Shelf Province • Southern Province • Spencer Gulf Shelf Province • Tasmanian Shelf Province • Tasmania Province • Central Eastern Province • Southeast Shelf Transition • Southeast Transition. The EPBC Protected Matters Report for the monitoring area is in Appendix 5 - .
Aspect potential impact radii	Other aspects of the activity which may impact on the environment, including subsea noise and artificial light, involve discrete areas that may be affected. These areas are delineated in terms of a contour or potential impact radii around a source and are further described in Section 6.0, and may also be referred to as Activity EMBAs. As an example, the largest of these is the area that represents the furthest extent of observable light (above ambient) from flaring which is expected to be less than 49km from the MODU.

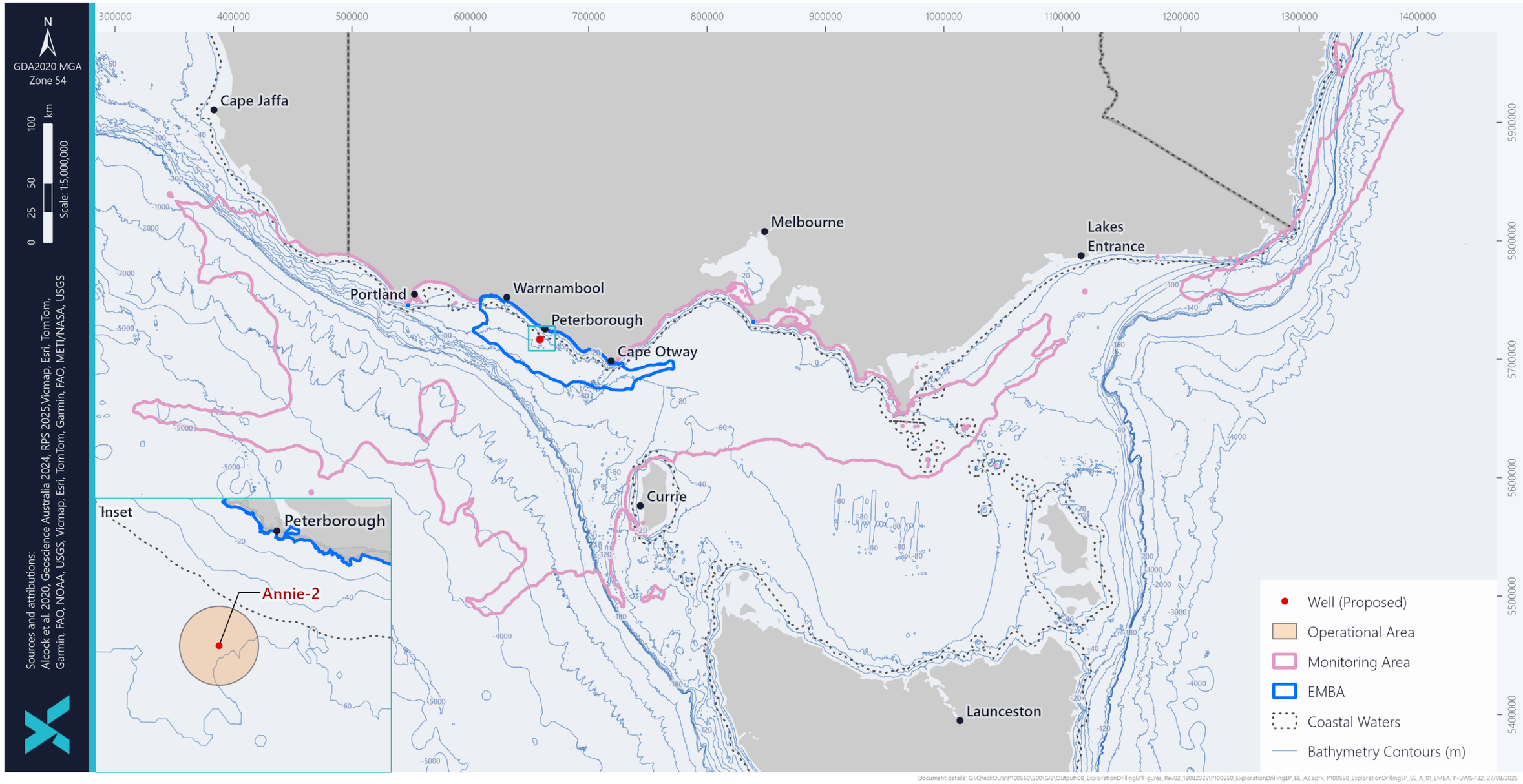


Figure 4-1: Annie-2 Development Drilling Monitoring Area and EMBA

4.3 Regional Setting

The Activity is located in the Otway marine bioregion (National Oceans Office (NOO) 2002) as classified by the Interim Marine and Coastal Regionalisation for Australia (IMCRA) (Figure 4-4). This bioregion extends from Cape Otway (Vic) to Cape Jaffa (South Australia) and includes the western islands of Bass Strait.

The Otway Basin coastline and marine environment is characterised by very steep to moderate offshore gradients, high wave energy and cold temperate waters subject to upwelling events (i.e., the Bonney Upwelling) (IMCRA 1998). The water in the area is well mixed given it is a higher-energy environment exposed to frequent storms and significant waves. Water quality is expected to be good and typical of the offshore marine environment. Upwelling water is nutrient rich and corresponds with increases in the abundance of zooplankton, which attracts baleen whales and other species (including EPBC-listed species) that feed on the plankton swarms (krill). The Bonney upwelling is seasonal, occurring west of Portland, >100 km west of the Activity. Upwelling around the operational area is considered unlikely or occasional (Huang and Wang, 2019).

The seabed on the Otway shelf is comprised of exhumed limestone and is generally rocky with relief that varies substantially including some areas of flat limestone and some of crevices, gutters, pillars and overhanging shelves. Whilst there are some areas of thin overlying sediment (comprising fine-coarse grained sand and calcarenite fragments), the region is starved of terrigenous sediment (Santos 2004, Fugro 2020; 2020a).

The coastline is generally rocky, with tall cliffs and rock outcrops, some sandy beaches, inlets and settlements. Shoreline habitats of the Otway coastline provide for a range of fauna including penguin colonies, fur seal colonies and bird nesting sites.

4.3.1 Existing Environment – East Coast Supply Project area and Annie 2 Operational Area

The geophysical site survey for Annie-2 development well operational area was completed in 2025 (MMA Offshore 2025a), a summary of the survey findings is included below.

The seabed generally slopes from the north to the south across the operational area. The seabed in the north is relatively flat with small ridges and small channels having a height of 1 m, orientated NE to SW causing undulations throughout. The Annie-2 well location has been revised (shifted approximately 20m) to avoid the undulating seabed with small features and steep slopes of 2m to 3m in proximity to the proposed well locations (refer Figure 4-2). The survey identified that the seabed drops off quickly to a relatively deep channel with several small isolated and detached features exist which rise quite steeply from the seabed. These features are 2 m – 3 m high.

In June 2025 Amplitude Energy undertook a seabed and environmental survey for the Annie 2 development well location. The environmental survey included for sediment sampling, water sampling and still/ habitat imaging/ video across the Annie 2 development well operational area (MMA Offshore 2025b). A summary of the results is included here. Figure 4-3 shows still images from the Annie-2 operational area.

Across the East Coast Supply Project (ECSP) area benthic epifauna habitat and communities in the Project Area are generally comprised of sand and shell grit substrates with low abundance of sponges and very low abundance of other epifaunal groups such as ascidians, hydroids, soft corals and algae. Taxa identified during the survey aligned with previous records and observations for the area, with the communities generally dominated by malacostracans (amphipods) and to a lesser

extent Polychaeta. No benthic infauna that are Protected Matters listed under the EPBC Act were recorded or are expected to occur in the ECSP area.

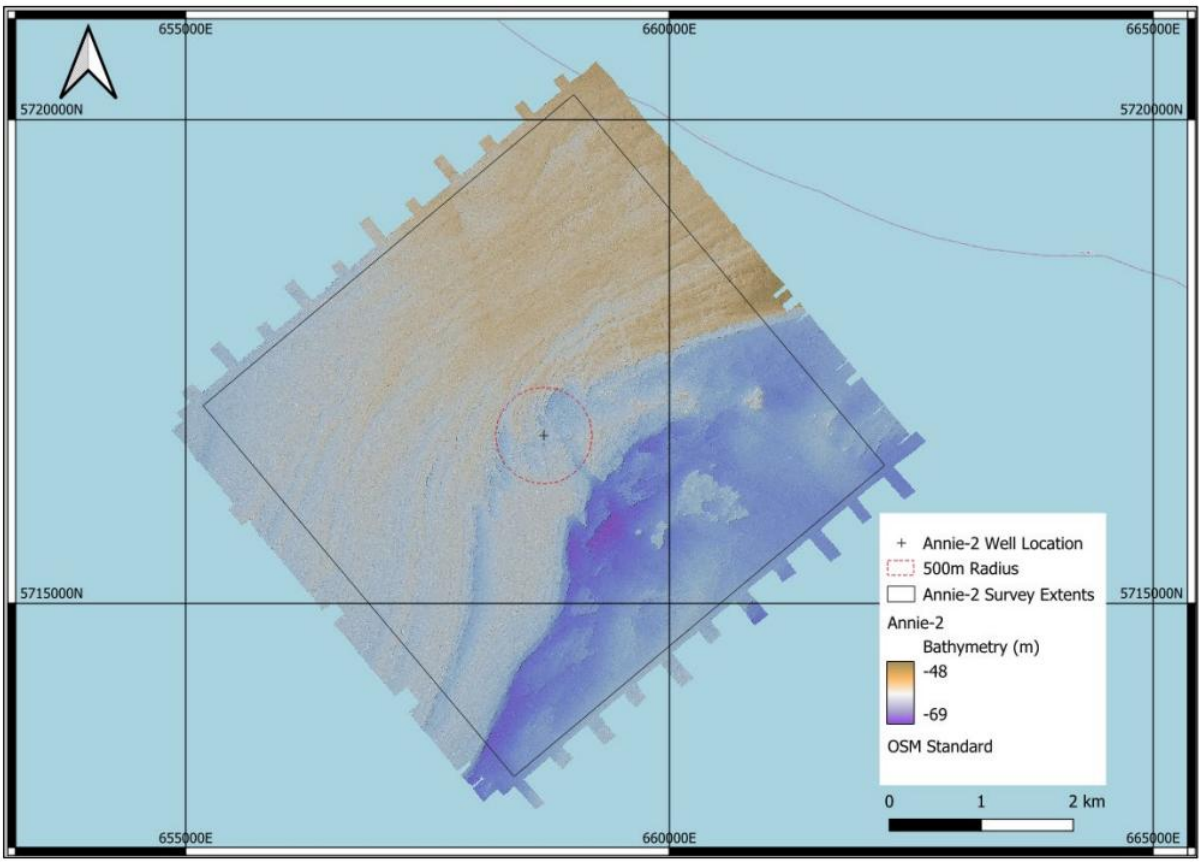


Figure 4-2: Overview of the bathymetry from the Annie-2 survey

Infauna - The benthic infauna communities exhibited low diversity overall, with Malacostraca (e.g., amphipods) and Polychaeta (segmented worms) being the dominant taxa, and broadly similar assemblages across the ECSP area. No Matters of National Environmental Significance (MNES) or protected infauna species were identified.

Epifauna –Across the ECSP area epifaunal communities were sparse, with sponges being the most common group. Substrates consisted mainly of sand, shell grit, and rubble, with occasional rock. The survey locations had low densities of hydroids, ascidians, and soft corals. No protected or sensitive epifaunal species were observed.

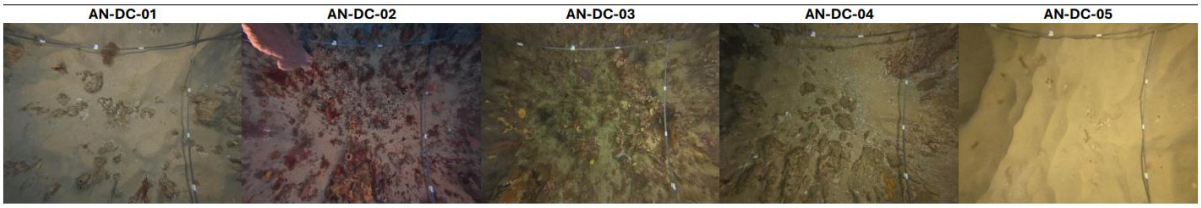


Figure 4-3: Drop Camera Images from June 2025 seabed survey within Annie-2 development well operational area.

No contaminants of concern were identified from the sediment and water quality sampling.

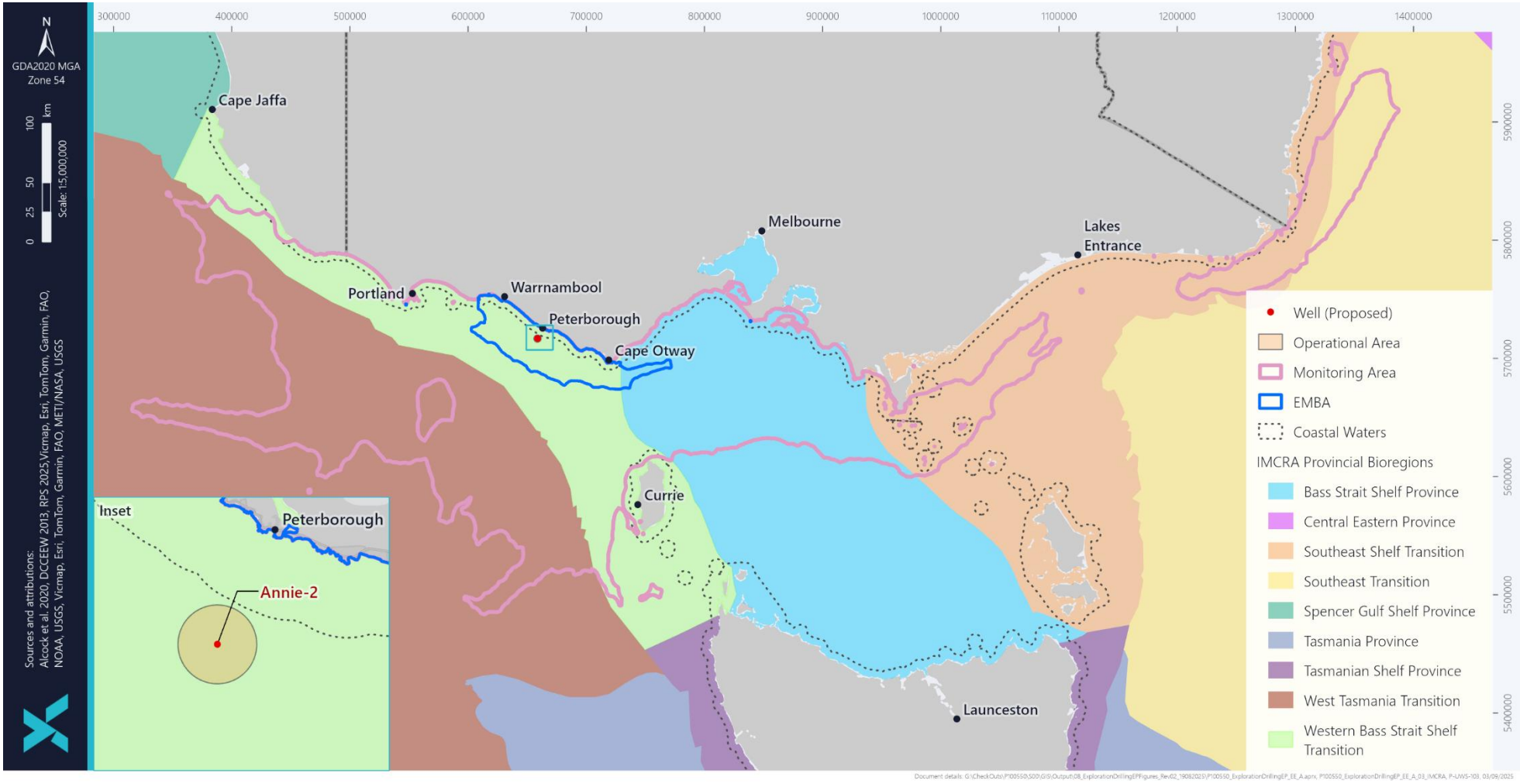


Figure 4-4: IMCRA regions within the Monitoring Area

4.4 Physical, Biological and Social Receptors

The following tables show the presence of receptors that may occur within the operational area and monitoring area. Further descriptions and maps of these physical, ecological, social and cultural receptors are provided in the Master Description of the Environment (Appendix 4 -):

- physical receptors (Table 4-2)
- ecological receptors (Table 4-3)
- social receptors (Table 4-4)
- cultural receptors (Table 4-6).

Examples of values and sensitivities associated with each of the receptors (physical, ecological, social or cultural) have been included in the tables. These values and sensitivities have been identified based on:

- Possible presence of first nations cultural heritage.
- Presence of listed threatened or migratory species or threatened ecological communities that have coastal or marine habitat identified in the EPBC Protected Matter searches (Appendix 5 -).
- Presence of biologically important behaviours (e.g., foraging, roosting or breeding) by fauna, including those identified in the EPBC Protected Matter searches and habitats critical to the survival of the species. (Appendix 5 -).
- Provision of an important link to other receptors (e.g., nursery habitat, food source).
- Provision of an important human benefit (e.g., recreation and tourism, aesthetics, commercial species, economic benefit).

There were species identified in the PMST reports do not have coastal or marine habitats (e.g. terrestrial or freshwater species) and are not discussed further. In determining the overlap with the operational and monitoring area both the conservative PMST tool as well as referenced DCCEEW GIS data have been used.

A summary of the seasonality of the key sensitivities is provided within Table 4-7.

4.4.1 Physical Receptors

Table 4-2: Presence of Physical Receptors within the Operational Area and Monitoring Area

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
Physical	Climate	Cool temperate region	N/A	✓	Present The operational area is typical of a cool temperate region with cold, wet winters and warm dry summers. The day-to-day variation in weather conditions is caused by the continual movement of the highs from west to east across the Australian continent roughly once every 10 days.	✓	Present The regional climate is dominated by sub-tropical high-pressure systems in summer and sub-polar low-pressure systems in winter. The low-pressure systems are accompanied by strong westerly winds and 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.
	Winds	Strong westerly winds found in the Southern Hemisphere between latitudes of 40°S and 50°S	• Cold fronts • Sustained west to south-westerly winds	✓	Present The operational area is subject to wind conditions aligned with the Bass Strait with conditions likely to align with those listed within the monitoring area. RPS (2024) acquired high-resolution wind data across their modelling domain from the National Centre for Environmental Prediction (NCEP) Climate Forecast System Reanalysis (CFSR). Monthly wind rose distributions from 2010 to 2019 (inclusive) derived from CFSR data for selected nodes nearby each release location can be found in Appendix 6 - .	✓	Present The monitoring area is located within the Roaring Forties. 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 (HP), bringing more variable winds and rainfall.

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
	Tides	Long, slow moving waves created by the gravitational pull of the moon	• Intertidal habitat • Fish aggregation • Fauna reproduction • Flora reproduction • Water quality • Maritime navigation	✓	Present The operational area has semi-diurnal tides with some diurnal inequities, generating tidal currents along a north-east/south-west axis, with speeds generally ranging from 0.1 to 2.5 m/s.	✓	Present The monitoring area and wider Otway region experiences semi-diurnal tides. The maximum range of spring tides in western Bass Strait is approximately 1.2 m. Sea level variation in the area can arise from storm surges and wave set up.
	Current	Directional movement of water driven by gravity, wind and water density	• Controlling climate • Food source • Flora reproduction • Water quality	✓	Present The operational area is subject to current conditions aligned with the Bass Strait with conditions likely to align with those listed within the monitoring area.	✓	Present Average current speeds in the area range between 0.15 m/s to 0.24 m/s, with maximum current speeds in a range between 0.66 m/s (Feb) to 1.10 m/s (Sept) (RPS 2024). Bottom currents can exceed 0.5 m/s in nearshore areas during storms. In the Port Campbell area, the predominant south-westerly swell direction means that there are minimal longshore currents as most waves reach the shore parallel to the coast. Lateral flushing within Bass Strait results from inflows from the South Australian Current, East Australian Current (EAC) and sub-Antarctic surface waters. During winter, the South Australian current moves dense, salty warmer water eastward from the Great Australian Bight into the western margin of the Bass Strait. In winter and spring, waters within the strait are well mixed with no obvious stratification, while during summer the central regions of the strait become stratified.

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
	Water Quality	Level of contaminants in water, sediments or biota or to changes in the physical or chemical properties of waters and sediments relative to a natural state.	• Ecosystem health • Fishing and aquaculture • Recreation and aesthetics • Industrial water supply • Cultural and spiritual	✓	Present The operational area is expected to have water quality typical of the offshore marine environment of the Otway Basin. Characterised by high water quality with low background concentrations of trace metals and organic chemicals and an undisturbed mid-depth environment.	✓	Present The monitoring area is expected to have the water quality typical of the Bass Strait and Otway Basin which are known for a complex, high energy wave climate and strong ocean currents. Water column turbidity on the Victorian coastline is subject to high natural variability. Weather conditions in the coastal environment around Port Campbell and Port Fairy are known to influence offshore hydrodynamic conditions and are a driver of sediment dynamics, impacting benthic and pelagic habitats and changing water column turbidity. Wave-driven sediment resuspension generates high turbidity levels within coastal zones, commonly exceeding 50 mg/L.
	Sea Water Temperature	Heat present within ocean waters	• Fauna behaviour • Fauna reproduction • Fauna distribution and aggregation • Flora community maintenance	✓	Present Sea-surface water temperatures vary seasonally from ~13.3°C (Sept) to ~18.6°C (Jan/Feb/Mar) (RPS 2024).	✓	Present The southwest region of Victorian area has significant upwelling of colder, nutrient rich deep water during summer that can cause sea surface temperatures to decrease by 3°C compared with offshore waters.
	Sediment Quality	Level and toxicity of contaminants within sediment	• Sink of dissolved contaminants • Source of bioavailable contaminants to benthic biota	✓	Present The operational area is located within the 400 km-long Otway Shelf, which lies between 37° and 43.5°S and 139.5°E (Cape Jaffa) and 143.5°E (Cape Otway). Beyond 60 m water depth, the seabed comprises outcrops of hard substrate	✓	Present The monitoring area is expected to have sediment quality typical of the surrounding area (Figure 4-5). Beach Energy conducted an environmental survey of a neighbouring title, located 3 km from the Amplitude Energy Otway offshore

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
					with very low relief and structural complexity separated by gullies of sand or fine gravel. Surveys investigating the seabed in the vicinity of the existing CHN facilities (at water depths from 60 m to 70 m) found the seabed to be characterised by sand or gravelly / rubble and hard platform substrates (Fugro 2020; 2020a) It is expected that sediment quality within the Otway offshore fields will be typical of the offshore marine environment of the Otway Basin.		facilities, from November 2019 to January 2020. Six samples were taken with the sediment predominantly sand with a range of 95-97% as a proportion of each sample. There was also very little silt and a maximum of 4.7% for the clay fraction.
	Air Quality	The chemical, physical, biological and aesthetic characteristics of air.	• Ecosystem health • Human health • Fauna health	✓	Present The air quality within the operational area will reflect the characteristics of the wider area. There are expected localised and temporary decreases in air quality due to particulate matter from diesel combustion on offshore vessels including fishing and cargo vessels which transit nearby.	✓	Present Historical air quality data from Cape Grim (most reliable point of refence for this Activity, given it is representative of a large area that is unaffected by regional pollution sources (cities or industry) (CSIRO, 2017) shows a continuous increase in most GHGs since the mid-to-late 1970s with carbon dioxide levels increasing by more than 15% since 1976, and concentrations of methane and nitrous oxide (N_2O) increasing by around 20% and 8% respectively since 1978. The increase in methane levels however has slowed recently and chlorofluorocarbons (CFCs) and halons are in decline. Increases have been attributed to anthropogenic causes, for example, fossil fuel consumption and agricultural practices.

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
	Ambient Light	Light present within an environment	• Fauna behaviour • Fauna breeding • Fauna hunting / predation • Circadian rhythms	✓	Present Ambient light within the operational area will reflect the Otway Basin with artificial emissions associated with offshore activities including vessel activity.	✓	Present Ambient artificial light sources associated with offshore activities exist in the Otway region, including both permanent (e.g., onshore/offshore developments) and temporary (e.g., vessels, road traffic) light sources.
	Ambient Noise	Level of background sound at a given location	• Fauna behaviour • Fauna breeding • Spatial distribution	✓	Present The operational area will reflect the natural sea sounds associated with the Otway Basin in addition to the noise associated with offshore activities including vessel activities.	✓	Present Natural sea sound sources are dominated by wind noise, but also include rain noise, biological noise and the sporadic noise of earthquakes. Anthropogenic underwater sound sources in the region comprise shipping and small vessel traffic, petroleum-production and exploration-drilling activities and infrequent petroleum seismic surveys.

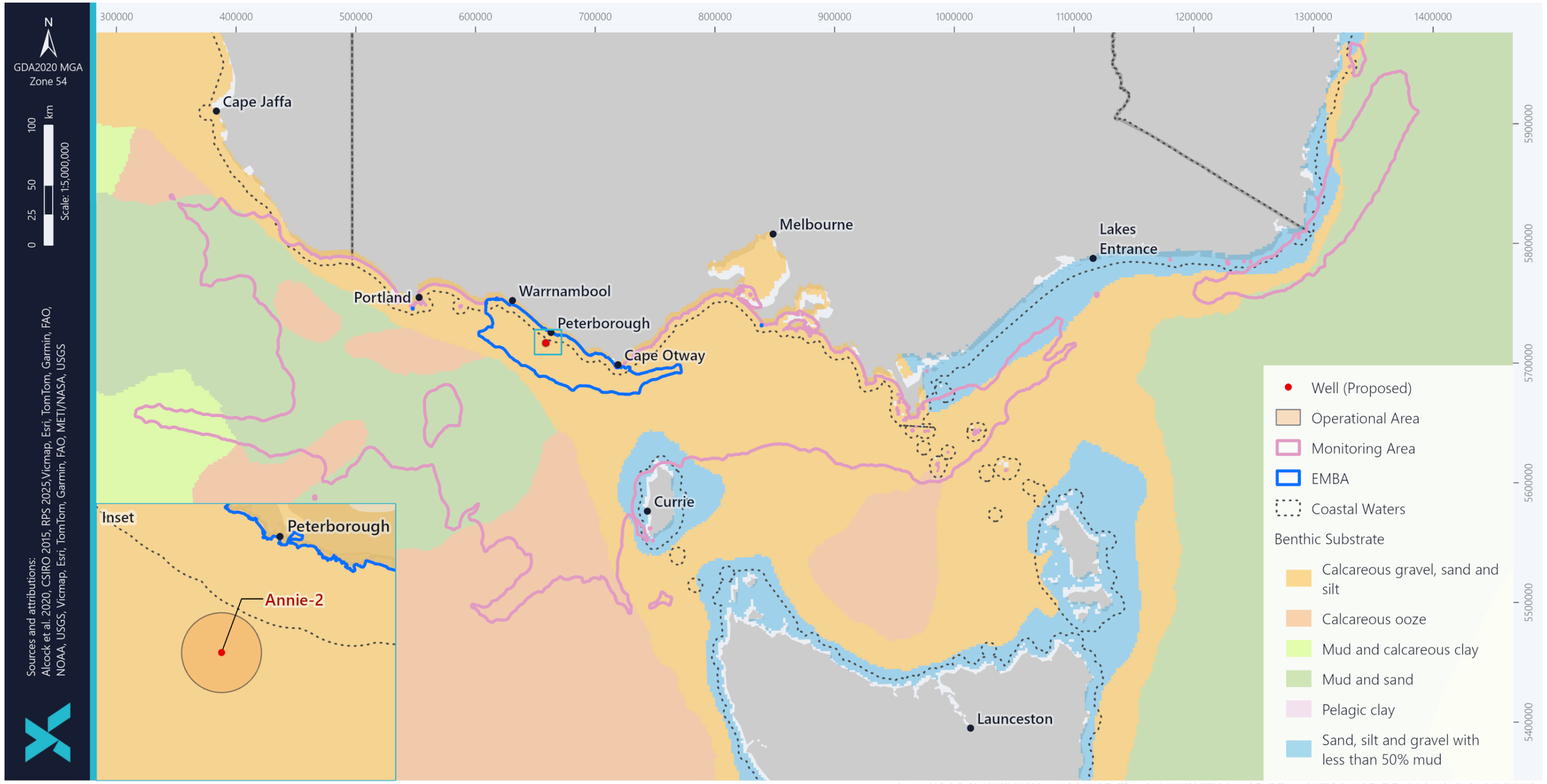


Figure 4-5: Benthic Substrate Within the Monitoring Area

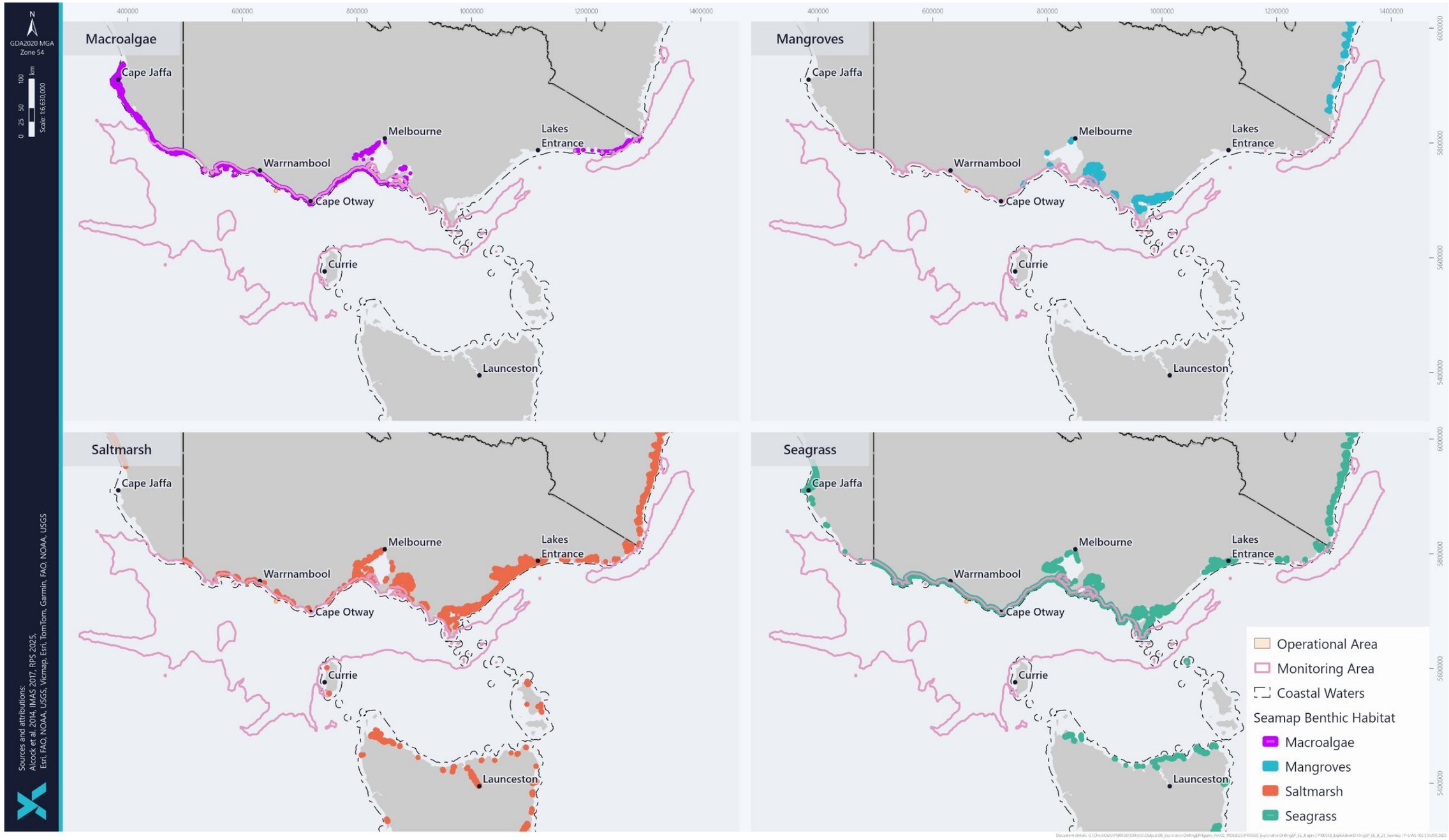


Figure 4-6: Benthic Habitats Within the Monitoring Area

4.4.2 Ecological Receptors

Table 4-3: Presence of Ecological Receptors within the Operational Area and Monitoring Area

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
Benthic Assemblages	Intertidal environment (0-2m)	Comprises rock platform, cliff face and sandy beach	• Foraging habitat • Nesting or Breeding habitat	-	Not present The operational area does not include the intertidal environment.	✓	Present Intertidal environment comprises a sandy cove and tidally submerged rock platforms with invertebrate colonisation.
	Shallow environments (2-8m)	Comprises kelp reef, patchy sandy reefs and sand	• Foraging habitat • Nesting or Breeding habitat	-	Not present The operational area does not include the shallow environment.	✓	Present Shallow environment comprises kelp reef with hard substrate with numerous epifauna and fish associated. Tracts of open shallow reef and give way to sand characteristically devoid of significant epifauna. But with significant infauna communities.
	Mid-depth environment (8–20m)	Comprises Ecklonia-dominated reef and sand	• Foraging habitat • Nesting habitat	-	Not present The operational area does not include the mid-depth environment.	✓	Present Mid depth is relatively uniform through the region dominated by sand with intermittent reef patches.
	Deep environment (20-70m)	Comprises sponge-dominated reef and sand.	• Foraging habitat • Nesting or Breeding habitat	✓	Present Much of the offshore seabed is comprised of hard platform substrates with some patches of thin overlying sand and rubble/calcarenite fragments. The patchy epifauna and presence of hard platform is consistent with the description of a KEF of the South-East bioregion, that is, shelf rocky reefs and hard substrates. During seabed surveys in proximity to CHN, epifauna was also noted to occur on	✓	Present Rocky reefs and hard grounds are located in all areas of the south-east marine region continental shelf including Bass Strait, from the sub-tidal zone shore to the continental shelf break. The continental shelf break generally occurs in 50 m to 150–220 m water depth. The shallowest depth at which the rocky reefs occur in Commonwealth waters is approximately 50 m. On the continental shelf, rocky reefs and hard grounds provide attachment sites for macroalgae and sessile invertebrates, increasing the structural diversity of shelf

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
					unconsolidated substrates (sand and gravel) and amongst biogenic rubble. Sponges were also present, forming part of the patchy epifauna (Fugro 2020; 2020a).		ecosystems. The reefs provide habitat and shelter for fish and are important for aggregations of biodiversity and enhanced productivity (DoE 2015b).
Coastal Habitats	Rocky Shoreline	Hard and soft, rocky shores, including bedrock outcrops, platforms, low cliffs (<5 m), and scarps.	• Depending on exposure, rocky shores can be host to a diverse range of flora and fauna, including barnacles, mussels, sea anemones, sponges, sea snails, starfish and algae.	-	Not present The operational area does not include rocky shorelines.	✓	Present The following areas along the Victorian coastline have known stretches of rocky shore: • The Cape Nelson to Portland coastline. • The section of coast between Warrnambool and Cape Otway (covering a distance of ~100 km). • Intertidal rocky shores stretch east to Marengo. • Interspersed areas between Marengo east to Anglesea.
	Sandy Beaches	Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors (e.g. waves, currents etc).	• Sandy beaches can support a variety of infauna and provide nesting habitat to birds and turtles.	-	Not present The operational area does not include sandy beaches.	✓	Present The following areas along the Victorian coastline have known stretches of sandy beach: • Portland to Port Fairy. • Port Fairy to Lady Bay (Warrnambool) coastline. • Small sections of sandy beach between Warrnambool and Cape Otway. • Marengo east to Anglesea.
	Mangroves	Mangroves grow in intertidal mud and sand, with specially adapted aerial roots.	• Provide for gas exchange during low tide • Important in helping stabilise coastal sediments.	-	Not present The operational area does not include mangroves.	✓	Present The mangroves in Victoria are the most southerly extent of mangroves found in the world and are located mostly along sheltered sections of the coast within inlets or bays, including Western Port Bay and Corner Inlet (MESA, 2015). There is only one species of mangrove

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
			• Provide a nursery ground for many species of fish and crustaceans. • Provide shelter or nesting areas for seabirds				found in Victoria, the white or grey mangrove (*Avicennia marina*) (Figure 4-6).
	Coastal Saltmarsh	Saltmarshes are terrestrial halophytic (salt-adapted) ecosystems that mostly occur in the upper-intertidal zone and are widespread along the coast. Saltmarshes are typically dominated by dense stands of halophytic plants such as herbs, grasses and low shrubs.	• The vegetation in these environments is essential to the stability of the saltmarsh, as they trap and bind sediments. • Provide a habitat for a wide range of both marine and terrestrial fauna, including infauna and epifaunal invertebrates, fish and birds.	-	Not present The operational area does not include coastal saltmarsh.	✓	Present Saltmarsh is found along many parts of the Victorian coast, although is most extensive in western Port Phillip Bay, northern Western Port, within the Corner Inlet-Nooramunga complex which, and behind the sand dunes of Ninety Mile Beach in Gippsland (Figure 4-6)..
Marine Fauna	Plankton	Phytoplankton and zooplankton	• Food Source	✓	Present Phytoplankton and zooplankton are widespread throughout oceanic environments and are expected to occur within the operational area.	✓	Present Phytoplankton and zooplankton are widespread throughout oceanic environments and is expected to occur within the monitoring area with a high level of diversity.

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
					Populations near the operational area are expected to be highly variable both spatially and temporally and are likely to comprise characteristics of tropical, southern Australian, central Bass Strait and Tasman Sea populations.		Coastal krill swarms throughout the water column of continental shelf waters primarily in summer and autumn, feeding on microalgae and providing an important link in the blue whale food chain. Increased abundance and productivity can occur in areas of upwelling. The seasonal Bonney Coast upwelling contributes to locally productive pelagic habitats that exhibit a range of zooplankton. Plankton distribution is dependent upon prevailing ocean currents including the East Australia Current, flows into and from Bass Strait and Southern Ocean water masses.
	Marine Invertebrates	Benthic and pelagic invertebrate communities	• Food Source • Commercial Species	✓	Present Invertebrate species located in the vicinity of the operational area include sponges, annelids, ascidians, hydrozoans, bryozoans, molluscs, krill and crustaceans.	✓	Present A variety of marine invertebrate species may occur within the monitoring area with high diversity with patchy distribution. Invertebrate diversity is high in southern Australian waters with distribution of species patchy, with little evidence of any distinct biogeographic regions.
	Fish	Fish, rays and sharks	• EPBC Act protected species	✓	Present Thirty-two fish shark species are listed as having the potential to occur within the operational area on the EPBC Act PMST (26 of which are pipefish, pipehorses, seadragons or seahorses). <u>Vulnerable species</u>: • Australian grayling • White shark	✓	Present Species present in the monitoring area are largely cool temperate species, common within the South Eastern Marine Region. Fifty-four fish, ray and shark species are listed as having the potential to occur within the monitoring area on the EPBC Act PMST (36 of which are pipefish, pipehorses and seahorses).<u>Critically Endangered</u> • Grey Nurse Shark <u>Endangered</u>

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area	Monitoring area
				Conservation Dependent species that may be present within the operational area include: • Blue warehou • Eastern school shark Migratory species: • Grey Nurse Shark • Porbeagle • White shark BIA (DCCEEW 2024a) There are no BIAs or Habitat Critical areas identified for EPBC Act listed fish within the operational area	• Eastern dwarf galaxias Vulnerable • Australian grayling • Black rockcod • Variegated pygmy perch • Whale shark • White shark Conservation Dependant • Blue warehou • Eastern gemfish • Eastern school shark • Harrisson's dogfish • Little gulper shark • Orange roughy Migratory species: • Giant manta ray • Grey nurse shark • Oceanic whitetip shark • Porbeagle • Shortfin mako • Whale shark • White shark BIA (DCCEEW 2024a) (Figure 4-7) • White shark (breeding and foraging) • Grey nurse shark (migration and foraging)

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
	Avifauna	Birds that live or frequent the coast or ocean	• EPBC Act protected species	✓	Present There are 32 threatened, migratory or listed marine species that may occur within the operational area that are protected under the EPBC Act. <u>Critically Endangered</u> • Eastern curlew • Curlew sandpiper • Orange-bellied parrot* <u>Endangered</u> • Grey-headed albatross • Southern giant-petrel • Northern royal albatross • Shy albatross • Gould's petrel <u>BIA (DCCEEW 2024a)</u> The operational area intersects 9 seabird foraging BIAs (Figure 4-8 to Figure 4-14): • Wedge-tailed shearwater • Wandering albatross • Antipodean albatross • Common diving-petrel • Bullers albatross • Shy albatross • Indian Yellow-nosed albatross • Black-browed albatross	✓	Present 114 EPBC Act listed bird species which inhabit coastal or marine habitats may occur within the monitoring area. Of these species, 57 EPBC Act listed threatened bird species may occur within the monitoring area. <u>Critically endangered</u> • Curlew sandpiper • Eastern curlew • Orange-bellied parrot • Swift parrot <u>Endangered species</u> • Australasian Bittern • Australian Painted Snipe • Black-tailed Godwit • Chatham Albatross • Common Greenshank, Greenshank • Gould's Petrel, Australian Gould's Petrel • Grey-headed Albatross • Lesser Sand Plover, Mongolian Plover • Northern Royal Albatross • Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit • Shy Albatross • Southern Giant-Petrel, Southern Giant Petrel • Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian)
			• Biologically Important Areas (BIAs)	✓		✓	
			• Iconic species	✓		✓	

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area	Monitoring area
				• Campbell albatross BIAs are displayed in Figure 4-8 to Figure 4-14.	<u>Vulnerable</u> • Antipodean Albatross • Australian Fairy Tern • Black Currawong (King Island) • Black-browed Albatross • Blue Petrel • Blue-winged Parrot • Brown Treecreeper (south-eastern) • Buller's Albatross, Pacific Albatross • Campbell Albatross, Campbell Black-browed Albatross • Diamond Firetail • Eastern Hooded Plover, Eastern Hooded Plover • Fairy Prion (southern) • Gibson's Albatross • Great Knot • Greater Sand Plover, Large Sand Plover • Green Rosella (King Island) • Grey Falcon • Grey Plover • Indian Yellow-nosed Albatross • Latham's Snipe, Japanese Snipe • Little Tern • Northern Buller's Albatross, Pacific Albatross • Northern Giant Petrel • Painted Honeyeater

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
							• Pilotbird • Red Knot, Knot • Ruddy Turnstone • Salvin's Albatross • Sharp-tailed Sandpiper • Soft-plumaged Petrel • Sooty Albatross • Sooty Shearwater • South-eastern Glossy Black-Cockatoo • Southern Royal Albatross • Southern Whiteface • Terek Sandpiper • Wandering Albatross • White-bellied Storm-Petrel (Tasman and Australasian) • White-capped Albatross • White-throated Needletail Migratory • Antipodean Albatross • Bar-tailed Godwit • Black-browed Albatross • Black-tailed Godwit • Broad-billed Sandpiper • Buller's Albatross, Pacific Albatross • Campbell Albatross, Campbell Black-browed Albatross

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area	Monitoring area
					• Caspian Tern • Chatham Albatross • Common Greenshank, Greenshank • Common Noddy • Common Sandpiper • Curlew Sandpiper • Double-banded Plover • Eastern Curlew, Far Eastern Curlew • Flesh-footed Shearwater, Fleshy-footed Shearwater • Fork-tailed Swift • Great Knot • Greater Crested Tern • Greater Sand Plover, Large Sand Plover • Grey Plover • Grey-headed Albatross • Grey-tailed Tattler • Indian Yellow-nosed Albatross • Latham's Snipe, Japanese Snipe • Lesser Sand Plover, Mongolian Plover • Little Curlew, Little Whimbrel • Little Tern • Marsh Sandpiper, Little Greenshank • Northern Giant Petrel • Northern Royal Albatross • Oriental Cuckoo, Horsfield's Cuckoo • Osprey

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area	Monitoring area
					• Pacific Golden Plover • Pectoral Sandpiper • Pin-tailed Snipe • Red Knot, Knot • Red-necked Phalarope • Red-necked Stint • Red-tailed Tropicbird • Ruddy Turnstone • Ruff • Salvin's Albatross • Sanderling • Sharp-tailed Sandpiper • Short-tailed Shearwater • Shy Albatross • Sooty Albatross • Sooty Shearwater • Southern Giant-Petrel, Southern Giant Petrel • Southern Royal Albatross • Swinhoe's Snipe • Terek Sandpiper • Wandering Albatross • Wandering Tattler • Wedge-tailed Shearwater • Whimbrel • White-capped Albatross • White-tailed Tropicbird

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area	Monitoring area
					• White-throated Needletail • Wood Sandpiper • Yellow Wagtail BIA (DCCEEW 2024a) (Figure 4-8 to Figure 4-14): • Antipodean Albatross (Foraging) • Australasian Gannet (Aggregation, Foraging) • Black Petrel (Foraging) • Black-browed Albatross (Foraging) • Bullers Albatross (Foraging) • Campbell Albatross (Foraging) • Common Diving Petrel (Foraging, Breeding) • Crested Tern (Foraging, Breeding) • Flesh-Footed Shearwater (Foraging) • Great-winged Petrel (Foraging) • Indian Yellow-nosed Albatross (Foraging) • Little Penguin (Foraging, Breeding) • Northern Giant Petrel (Foraging) • Short-tailed Shearwater (Breeding, Foraging) • Shy Albatross (Foraging likely) • Sooty Albatross (Foraging, Breeding) • Southern Giant Petrel (Foraging) • Wandering Albatross (Foraging) • Wedge-tailed Shearwater (Foraging) • White-capped Albatross (Foraging) • (White-faced Storm-petrel (Breeding, Foraging) • Wilsons Storm Petrel (Migration)

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
							Iconic species Several populations of the little penguin occur within Bass Strait, with nesting sites located on islands within Bass Strait and at various mainland shorelines. Penguin colonies known to occur in the southwest region of Victoria that are within the monitoring area include Deen Maar (Lady Julia Percy Island) (2,000 breeding pairs), Twelve Apostles-London Arch (1,000 breeding pairs), Middle Island (200 breeding pairs) and Merri Island (200 breeding pairs).
	Marine Reptiles	Turtles	• EPBC Act Protected Species • BIAs	✓	Present Three marine turtle species, all of which are listed migratory, and are likely to occur within the operational area: Endangered • Leatherback turtle • Loggerhead turtle Vulnerable • Green turtle BIA (DCCEEW 2024a) No BIAs or Habitat Critical areas are within the operational area.	✓	Present Five species of marine turtle listed as endangered under the EPBC Act may occur within the monitoring area: Endangered • Leatherback turtle • Loggerhead turtle Vulnerable • Flatback turtle • Green turtle • Hawksbill turtle BIA (DCCEEW 2024a) There are no BIAs or Habitat Critical areas identified for EPBC Act listed turtles within the monitoring area.
	Marine Mammals	Seals and Sealions (Pinnipeds)	• EPBC Act Protected Species	✓	Present Marine • Australian fur-seal • New Zealand fur-seal	✓	Present Three pinniped species (or species habitat) may occur within the monitoring area. Endangered • Australian Sea-lion

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
					Important colonies and breeding habitat in proximity to the operational area are displayed in Figure 4-15. <u>BIAs (DCCEEW 2024a)</u> No BIAs or biological important behaviours were identified within the operational area.		<u>Marine</u> • Australian Fur-seal • New Zealand fur seal <u>BIA (DCCEEW 2024a) (Figure 4-15)</u> • Australian sea lion (Foraging (male).
		Cetaceans – whales and dolphins	• EPBC Act Protected Species	✓	Present Thirteen cetacean species (7 whales, 6 dolphins) are listed under the EPBC Act PMST as possibly occurring within the operational area. Four whale species are threatened: <u>Endangered</u> • Blue whale • Southern right whale <u>Vulnerable</u> • Fin whale • Sei whale <u>Migratory</u> • Blue Whale • Dusky Dolphin • Fin Whale • Humpback Whale • Killer Whale, Orca • Pygmy Right Whale • Sei Whale	✓	Present Thirty-three cetacean species are listed under the EPBC Act PMST as possibly occurring within the monitoring area. Four whale species are threatened. <u>Endangered Species</u> • Blue whale • Southern right whale <u>Vulnerable Species</u> • Fin whale • Sei whale <u>Migratory</u> • Antarctic Minke Whale, Dark-shoulder Minke Whale • Blue Whale • Bryde's Whale • Dusky Dolphin • Fin Whale • Humpback Whale • Killer Whale, Orca • Pygmy Right Whale • Sei Whale
			• BIA	✓		✓	

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area	Monitoring area
				• Southern Right Whale Cetacean • Bottlenose Dolphin • Common Dolphin, Short-beaked Common Dolphin • Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin • Minke Whale • Risso's Dolphin, Grampus BIA (DCCEEW 2024a) (Figure 4-16) • Pygmy blue whale (foraging annual high use area) • Southern right whale (migration)	• Southern Right Whale • Sperm Whale Cetacean • Andrew's Beaked Whale • Arnoux's Beaked Whale • Blainville's Beaked Whale, Dense-beaked Whale • Bottlenose Dolphin • Common Dolphin, Short-beaked Common Dolphin • Cuvier's Beaked Whale, Goose-beaked Whale • Dwarf Sperm Whale • False Killer Whale • Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale • Gray's Beaked Whale, Scamperdown Whale • Hector's Beaked Whale • Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin • Long-finned Pilot Whale • Minke Whale • Pygmy Sperm Whale • Risso's Dolphin, Grampus • Shepherd's Beaked Whale, Tasman Beaked Whale • Short-finned Pilot Whale • Southern Bottlenose Whale • Southern Right Whale Dolphin

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
							• Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale True's Beaked Whale BIA (DCCEEW 2024a) (Figure 4-16) The monitoring area intersects: • Humpback whale (Migration (north and south)) • Indo-Pacific / spotted bottlenose dolphin (Breeding) • Pygmy blue whale (Foraging (annual high use area)) • Southern right whale (Migration, Reproduction) Habitat Critical The National Recovery Plan for the Southern Right Whale (DCCEEW 2024b) identifies all reproductive BIAs are habitat critical to the survival of the species as across the species range. The monitoring area intersects with this a reproduction BIA which is indicated as critical habitat (DCCEEW 2024b). Detailed existing environment descriptions of whales within the monitoring area are described in Appendix 4 - .
Invasive Species	Marine Pests	Established and Exotic	• Introduced marine species (IMS)	✓	Not identified Marine pests have not been identified within the operational area to date, though the potential exists for marine pests to establish through natural and anthropogenic influences.	✓	Present In the South-east Marine Region, 115 marine species are known to be introduced, and an additional 84 are considered to be possible introductions or 'cryptogenic' species. Eleven species are considered to be invasive marine species (IMS). Key known pest species in the South-East Marine Region include: • Northern pacific sea star (*Asterias amurensis*). • Fan worms (*Sabella spallanzannii* and *Euchone sp*).

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring area	
							• Bivalves (*Crassostrea gigas* (Pacific oyster), *Corbula gibba* and *Theora fragilis*). • Crabs (*Carcinus maenas* (European shore crab) and *Pyromaiatuberculata*). • Macroalgae (*Undaria pinnatifida* (Japanese giant kelp) and Codium fragile (*ssp.tormentosoides*); and • The introduced NZ screw shell (*Maoricolpus roseus*), known to form extensive and dense beds on the sandy sea-floor in eastern Bass Strait spreading to the 80 m depth contour off eastern Victoria and NSW (Patil *et al.* 2004).
	Marine Viruses	Infection agent found in marine environments	• Introduced virus species	✓	Present Marine viruses within the operational area are anticipated to reflect the conditions of the south-east marine region.	✓	Present *Abalone Viral Ganglioneuritis* (AVG), has been detected in southwest Victoria and was confirmed as far east as White Cliffs near Johanna, and west as far as Discovery Bay Marine Park (DAFF 2024). More recently in May 2021 wild abalone off the coast of Cape Nelson tested positive to AVG (CSIRO 2021).

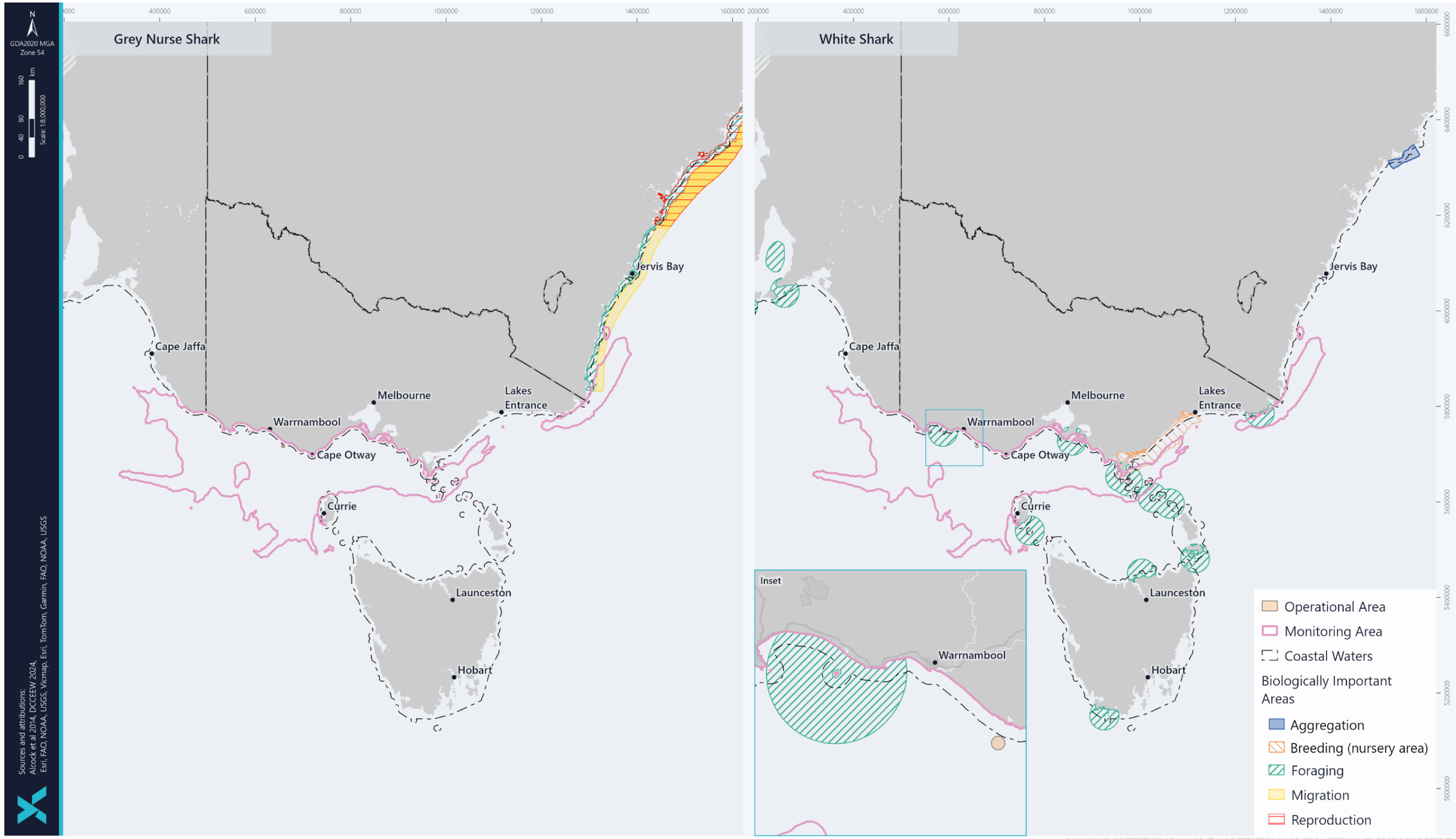


Figure 4-7: Grey Nurse Shark and White Shark BIAs Within the Monitoring Area

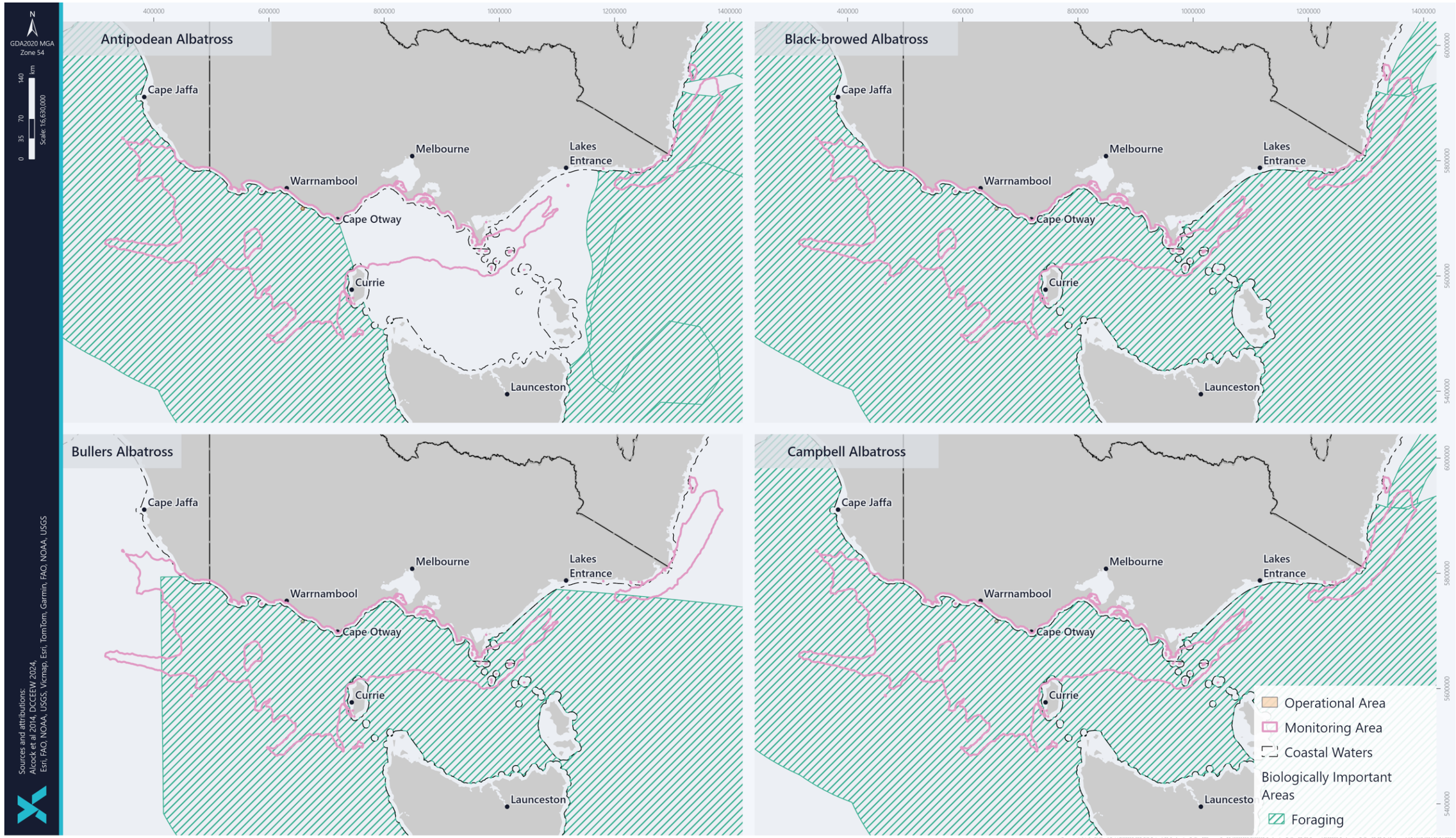


Figure 4-8: Antipodean Albatross, Black-browed Albatross, Bullers Albatross, and Campbell Albatross BIAs Within the Monitoring Area

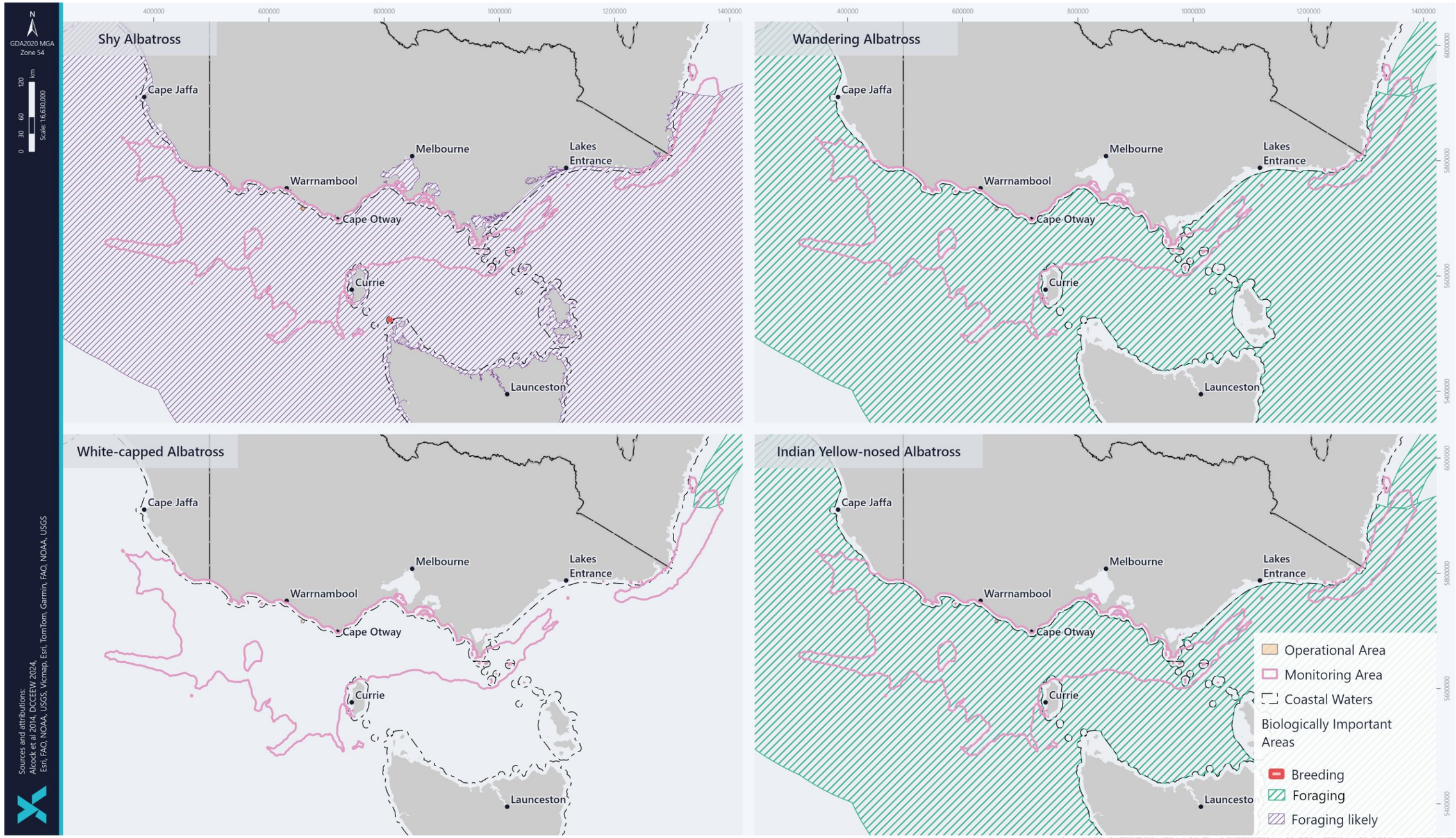


Figure 4-9: Shy Albatross, Wandering Albatross, and White-capped Albatross BIAs Within the Monitoring Area

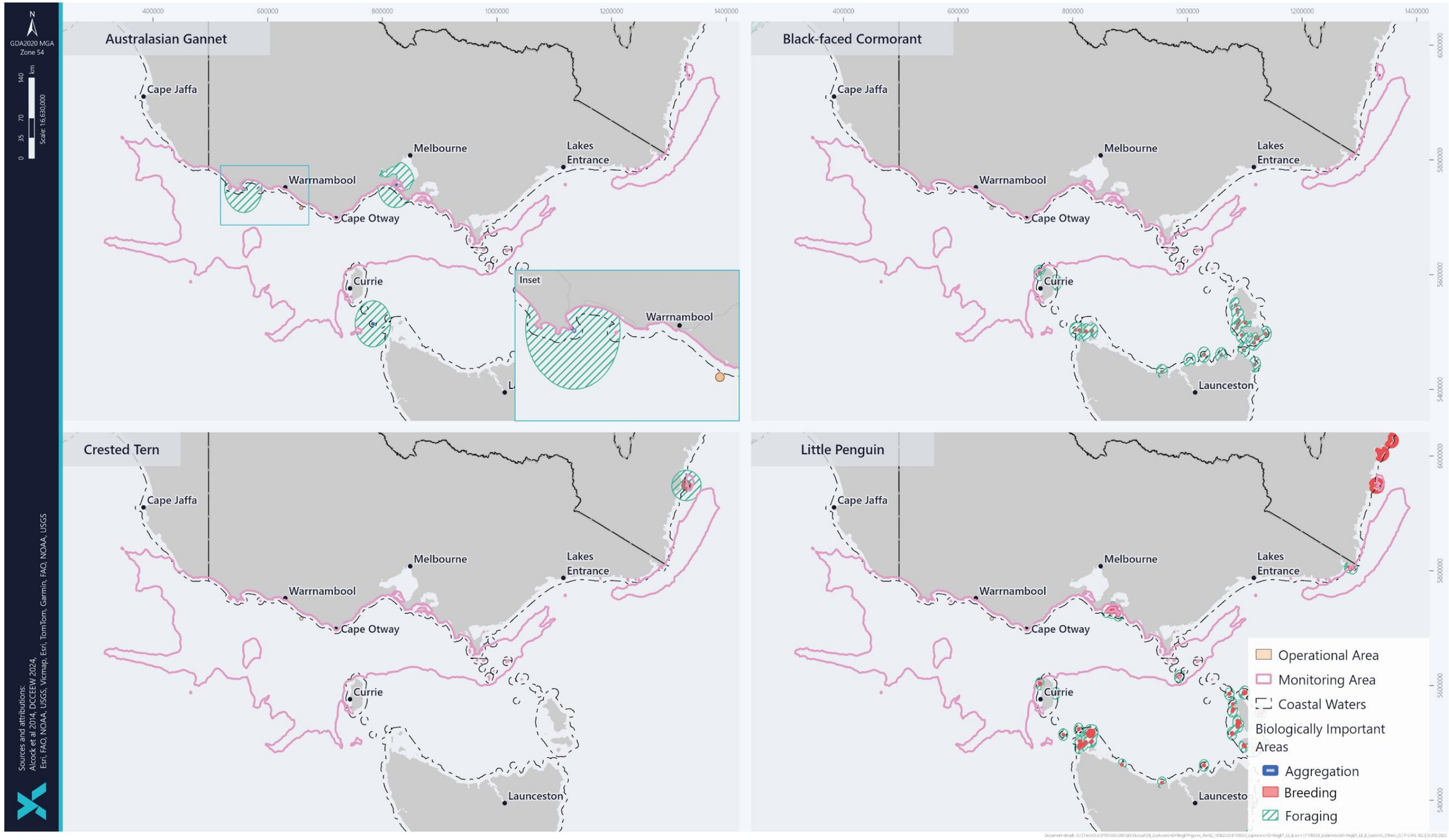


Figure 4-10: Australian Gannet, Black-faced Cormorant, Crested Tern, and Little Penguin BIAs Within the Monitoring Area

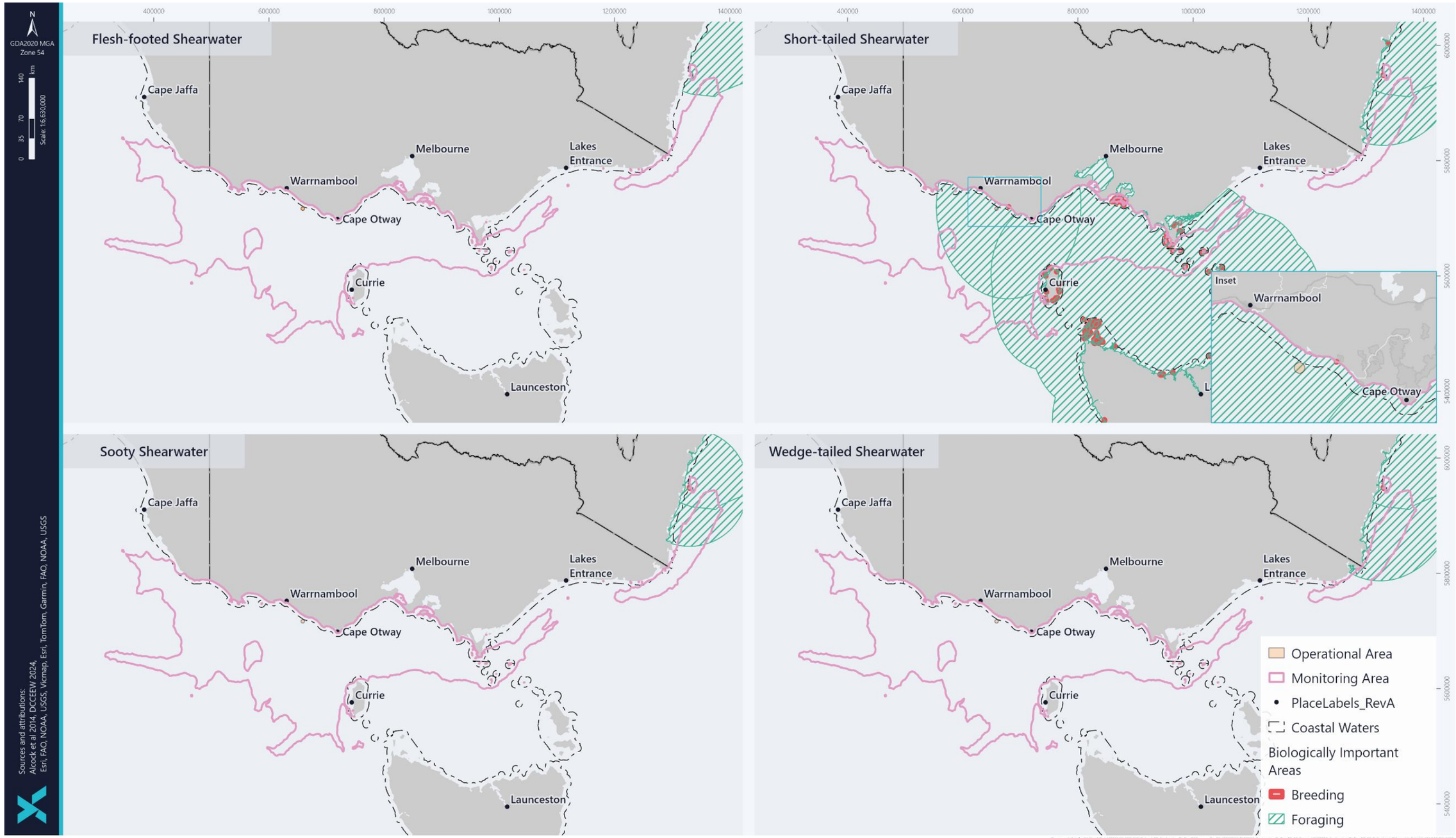


Figure 4-11: Flesh-footed Shearwater, Short-tailed Shearwater, Sooty Shearwater, and Wedge-tailed Shearwater BIAs Within the Monitoring Area

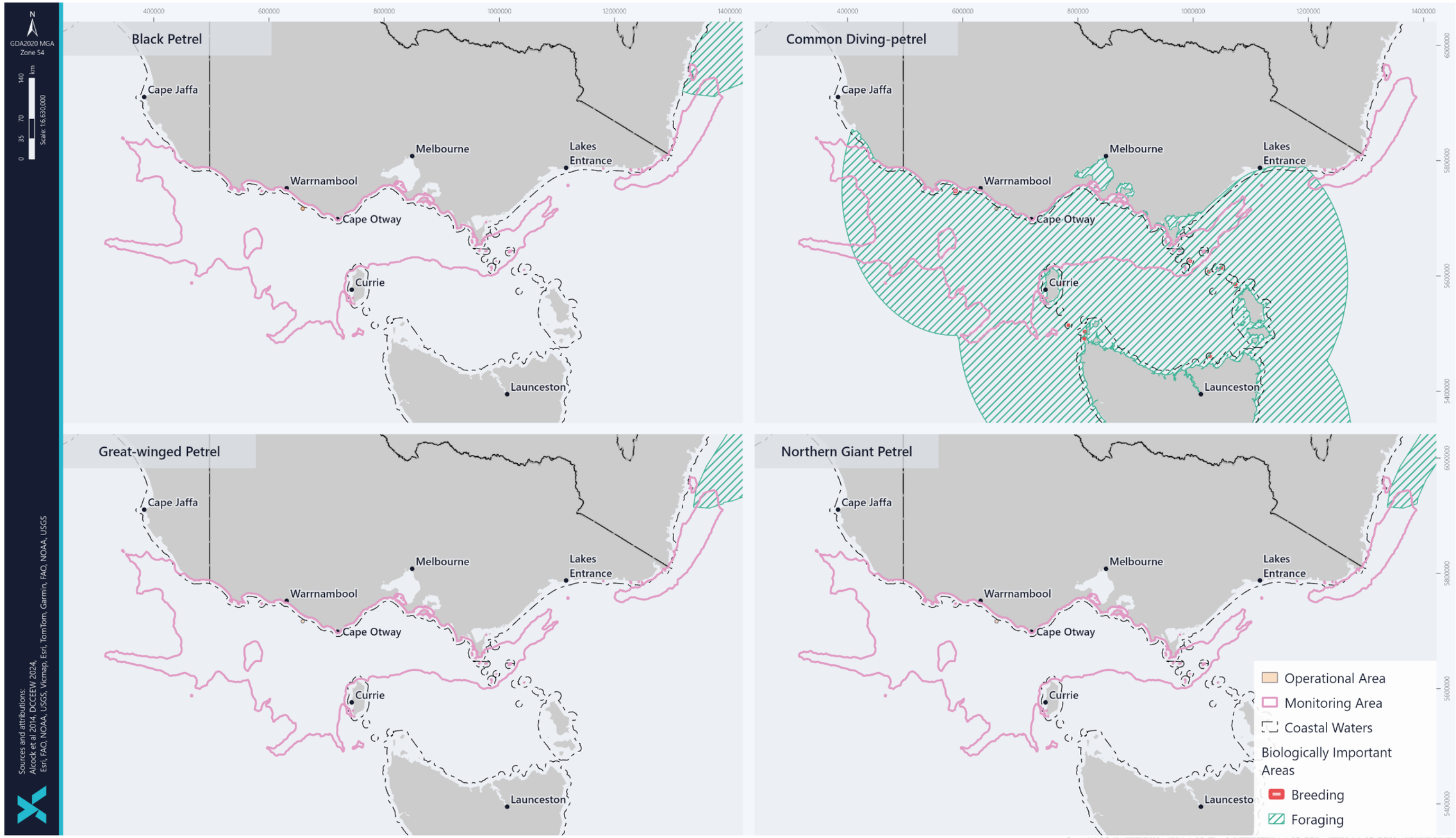


Figure 4-12: Black Petrel, Common Diving-Petrel, Great-winged Petrel, and Northern Giant Petrel BIAs Within the Monitoring Area

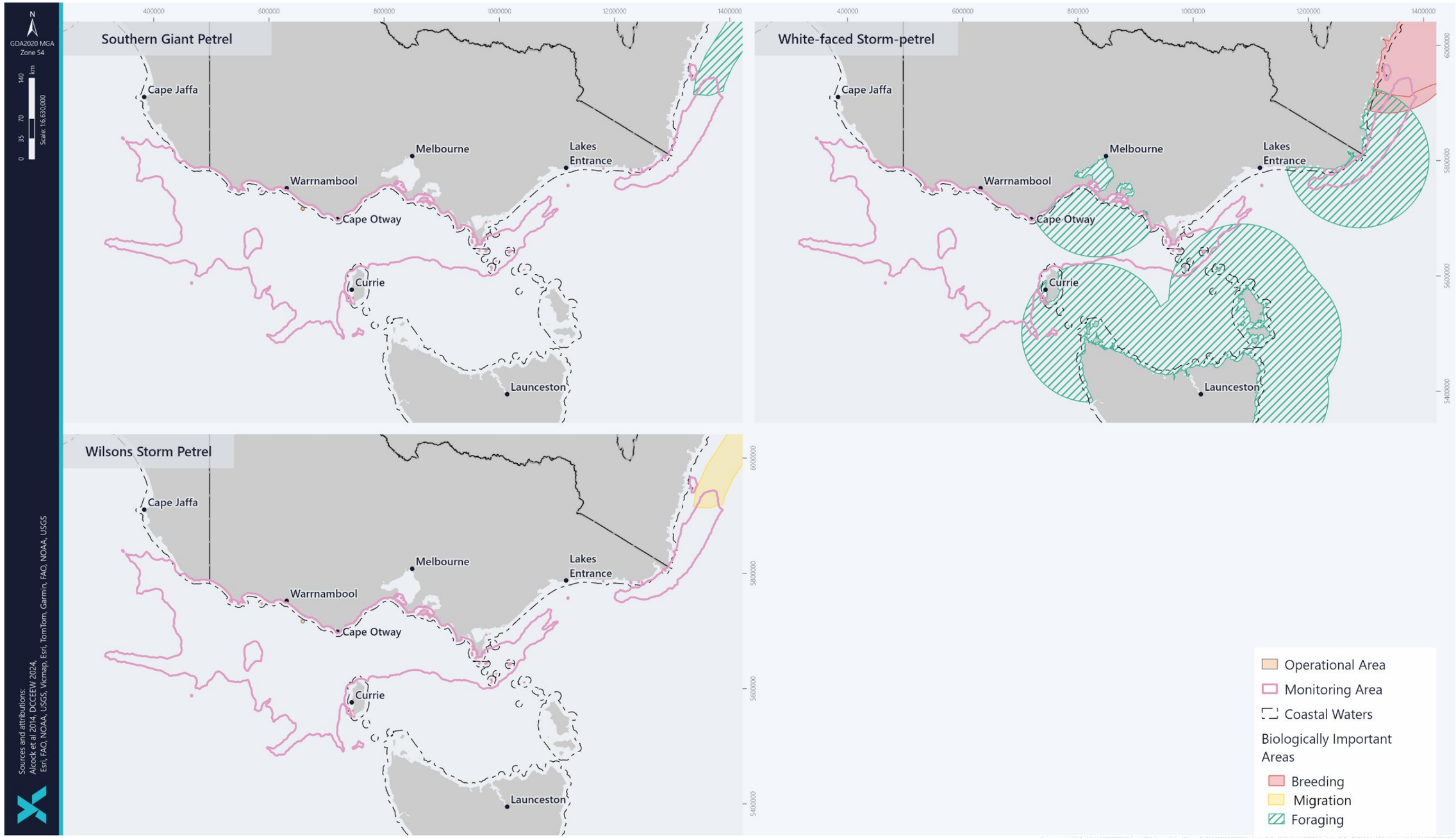


Figure 4-13: Southern Giant Petrel, White-faced Storm-petrel, and Wilsons Storm Petrel BIAs Within the Monitoring Area

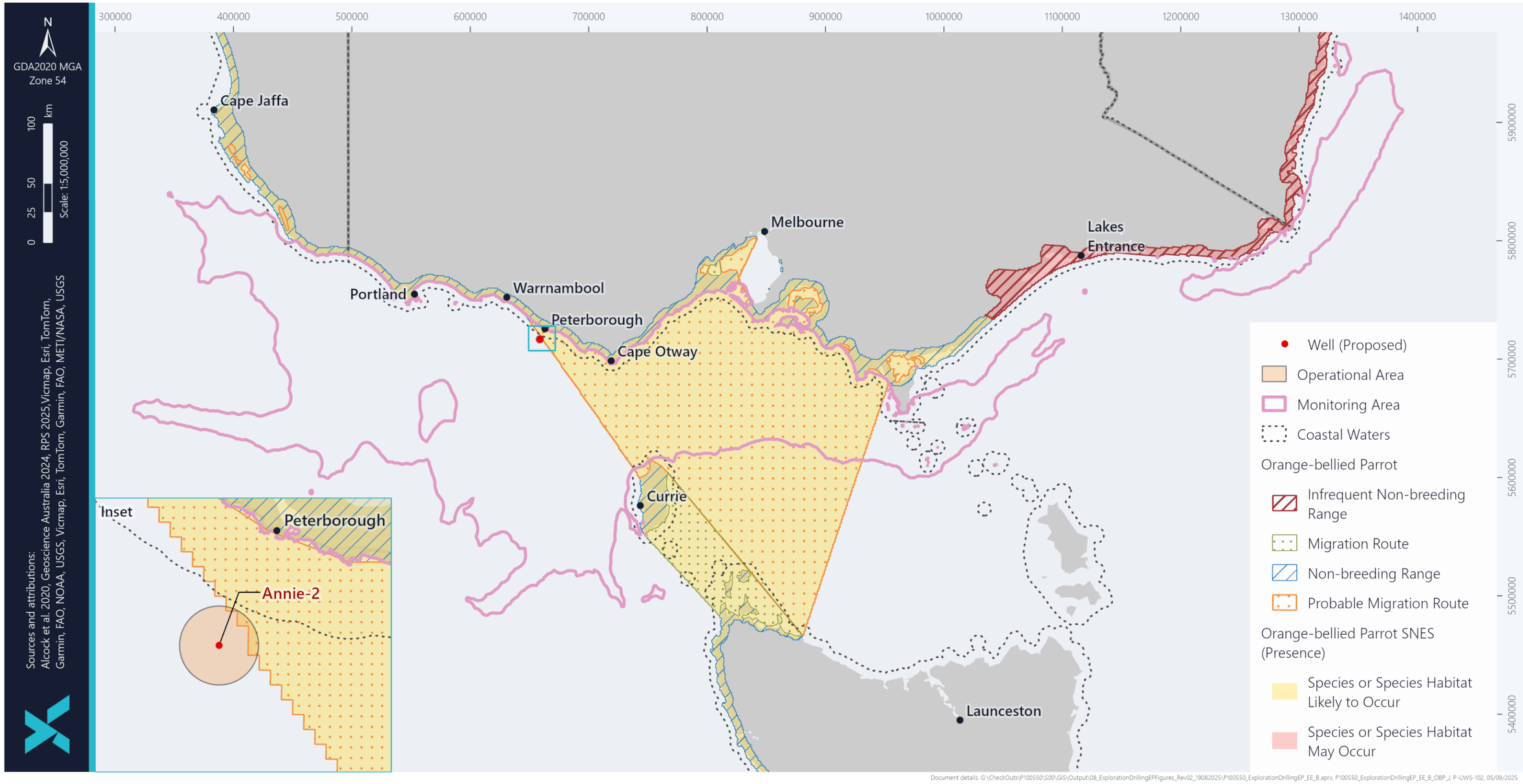


Figure 4-14: Orange-bellied Parrot Presence Within the Monitoring Area

Figure 4-15: Australian Sea Lion BIAs Within the Monitoring Area

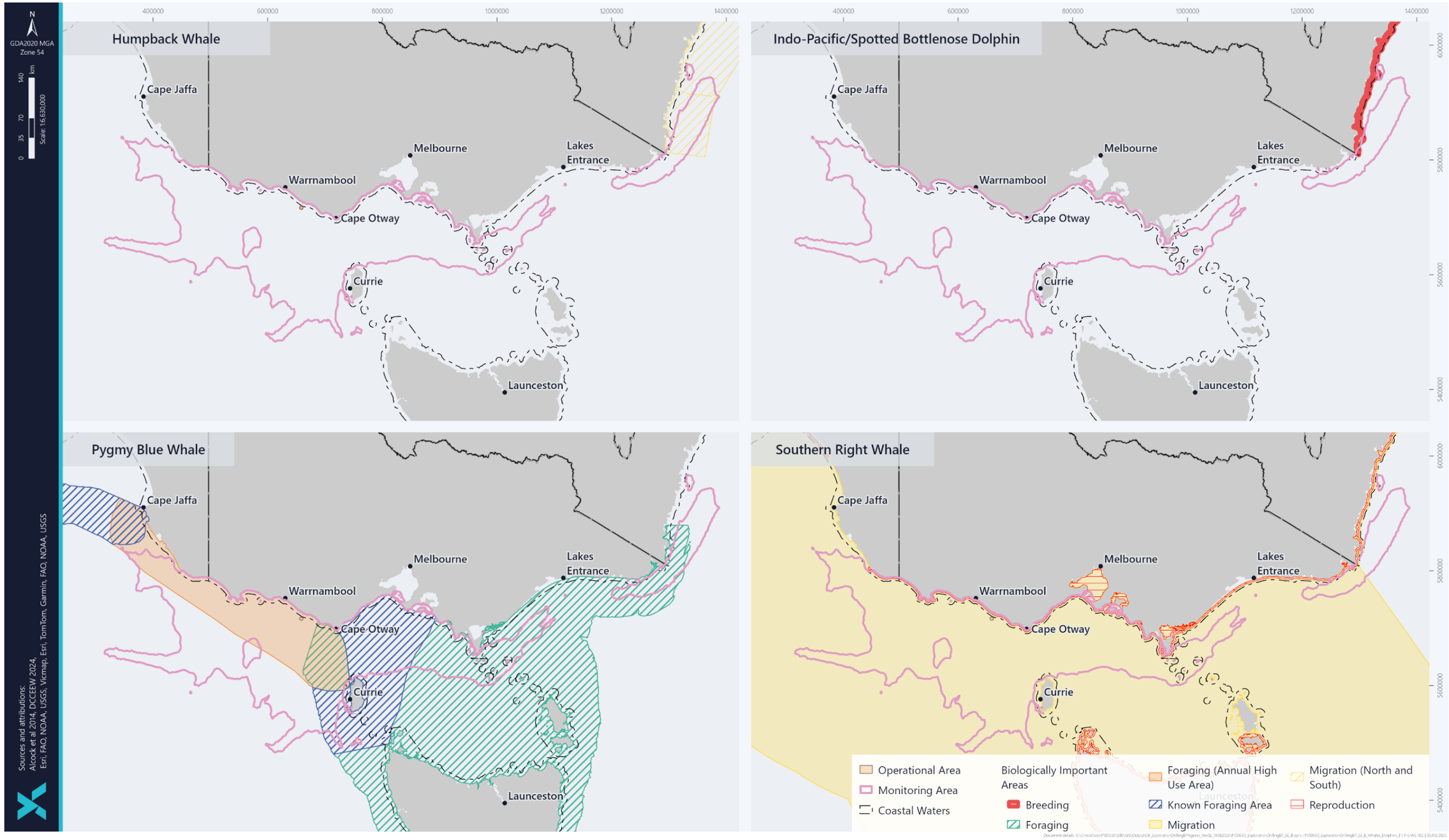


Figure 4-16: Humpback Whale, Indo-Pacific/ Spotted Bottlenose Dolphine, Pygmy Blue Whale, and Southern Right Whale BIAs Within the Monitoring Area

4.4.3 Social Receptors

Table 4-4: Presence of Social Receptors within the Operational Area and Monitoring Area

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
Socio-ecological Systems	Commonwealth Marine Area	KEF	• High productivity (includes episodic productivity) • Aggregations of marine life • High biodiversity • High level of endemism • Unique Habitat	✓	Present The operational area does not intersect with any delineated KEFs (Figure 4-17). Shelf rocky reef and hard grounds are located in all areas of the south-east marine region on the continental shelf, including the operational area (DCCEEW, 2015b).	✓	Present Five Key Ecological Features are intersected by the monitoring area (DCCEEW, 2015b) (Figure 4-17): • Bonney Upwelling KEF • Canyons on the eastern continental slope • Shelf rocky reefs (temperate east marine region) • Upwelling East of Eden • West Tasmanian Canyons KEF Shelf Rocky reefs and hard substrates of the south-east marine region is not a spatially defined KEF. Although, this KEF is known to be well represented within the southeast marine region, on the continental shelf.
		Australian Marine Parks	• Aggregations of marine life • High productivity and biodiversity • Unique habitat	-	Not Present The operational area does not intersect any Australian Marine Parks (Director of National Parks, 2025).	✓	Present Four Australian Marine Parks are intersected by the monitoring area (Director of National Parks, 2025) (Figure 4-18) is: • Apollo AMP (IUCN category (VI), Multiple Use Zone (VI)). • Beagle AMP (IUCN category (VI), Multiple use (VI), National Park Zone (II)).

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							• Nelson AMP (IUCN category (II), National Park Zone (II)). • Zeehan AMP (IUCN category (II), Multiple Use Zone (VI), Special purpose (VI). National Park Zone II)).
	Commonwealth Area	Threatened Ecological Communities (TEC)	Support ecosystem services Provide habitat Community at risk of extinction	-	Not Present The operational area does not intersect any TEC (DCCEEW, 2016).	✓	Present Fifteen TECs are likely or may occur within the monitoring area. Eleven of these TECs have coastal areas (DCCEEW, 2016) (Figure 4-19): • Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community (Endangered). • Brogo Vine Forest of the South East Corner Bioregion (Endangered) • Coastal swamp oak (*Casuarina glauca*) forest of New South Wales and south east Queensland ecological community (Endangered) • Giant kelp marine forests of South East Australia (Endangered). • Grassy Eucalypt Woodland of the Victorian Volcanic Plain (Critically Endangered) • Illawarra and south coast lowland forest and woodland ecological community (Critically Endangered)

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							• Karst springs and associated alkaline fens of the Naracoorte coastal plain bioregion (Endangered) • Lowland Grassy Woodland in the South East Corner Bioregion (Critically Endangered) • Natural Damp Grassland of the Victorian Coastal Plains (Critically Endangered) • Natural Temperate Grassland of the Victorian Volcanic Plain (Critically Endangered) • River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria (Critically Endangered) • Subtropical and Temperate Coastal Saltmarsh (Vulnerable). • Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (*Eucalyptus ovata / E. brookeriana*) (Critically Endangered) • Tasmanian white gum (*Eucalyptus viminalis*) wet forest (Critically Endangered) • White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered)
	State Parks and Reserves	Marine Protected Areas	Aggregations of marine life High productivity Biodiversity	-	Not Present The operational area does not intersect any State protected marine areas (DCCEEW, 2025e).	✓	Present Twenty-six state marine protected areas (DCCEEW, 2025e) are located within the monitoring area including: • 9 Victorian Marine National Parks

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							– Bunurong – Cape Howe – Churchill Island – Discovery Bay – Point Addis – Point Hicks – Port Phillip Heads – Twelve Apostles – Wilsons Promontory • 8 Victorian Marine Sanctuaries – Barwon Bluff – Beware Reef – Eagle Rock – Marengo Reefs – Merri – Mushroom Reef – Point Danger – The Arches • 3 Victorian NPS4 – Wilsons Promontory Marine Park – Wilsons Promontory Marine Reserve – Bunurong Marine Park • 1 Tasmanian National Park – Kent Group

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							• 1 South Australian Marine Parks – Lower South East • 1 NSW Marine Park – Batemans.
		Terrestrial Protected Areas	Aggregations of terrestrial life High productivity Biodiversity	-	Not present The operational area does not intersect any State protected terrestrial areas (DCCEEW, 2025e).	✓	Present State Terrestrial Protected Areas with marine or coastal interface (DCCEEW, 2025e) are located within the monitoring area (Figure 4-20) including: • 4 Victorian Conservation Parks – Bay of Islands Coastal Park – Cape Conran Coastal Park – Cape Liptrap Coastal Park – Discovery Bay Coastal Park • 2 Victorian Heritage Rivers – Glenelg River – Aire River • 9 Victorian National Parks – Croajingolong – French Island – Great Otway – Lower Glenelg – Mornington Peninsula – Mount Richmond – Point Nepean – Port Campbell

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							– Wilsons Promontory • 16 Victorian Natural Features Reserve – Aire River W.R. – Aireys Inlet B.R. – Anglesea B.R. – Cape Patterson N.C.R – Edna Bowman N.C.R. – Kilcunda N.C.R. – Lake Connewarre W.R – Lake Gillear W.R – Lily Pond B.R. – Portland H47 B.R. – Princetown W.R – Queenscliff N.F.R – Reef Island and Bass River Mouth N.C.R – Ventnor B.R. – Wild Dog Creek SS.R. – Wonthaggi Heathlands N.C.R • 9 Victorian Nature Conservation Reserve – Breamlea F.F.R. – Lady Julia Percy Island W.R. – Lawrence Rocks W.R. – Lonsdale Lakes W.R – Marengo N.C.R.

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							– Seal Islands W.R. – Swan Bay - Edwards Point W.R – Tyrendarra F.R – Yambuk F.F.R.1 Victorian Nature Park • 3 Private Nature Reserves and Other – Phillip Island Nature Park – Unnamed C0293 – Unnamed P0176 • 2 Victorian Reference Area – Anser Island – Stony Creek (Otways) • 3 Victorian Remote and Natural Areas NPS6 – Rame Head – Southern Wilsons Promontory – Wilson Promontory Islands • 1 Victorian State Park – Cape Nelson • 1 Victorian Wilderness Zone – Cape Howe • 8 Tasmanian Conservation Areas – Cape Wickham – Cataraqui Point – Cone Islet – East Moncoeur Island

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							– Hogan Group – Seal Rocks – Stokes Point – Sugarloaf Rock • 5 Tasmanian Nature Reserves – Curtis Island – Devils Tower – North East Islet – Rodondo Island – West Moncoeur Island • 3 South Australian Conservation Parks – Douglas Point – Nene Valley – Piccaninnie Ponds • 2 Heritage agreements – Unnamed (No.HA1404) – Unnamed (No.HA1457) • 2 New South Wales Nature Reserves – Barunguba Montague Island – Nadgee • 1 New South Wales National Park – Beowa
	Wetlands of International Importance	Ramsar wetlands (International Importance)	Aggregation, foraging and nursery habitat for marine life	-	Not present	✓	Present There are 5 Wetlands of International Importance with marine or coastal interface (DCCEEW, 2024q)

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
					The operational area does not intersect any Wetlands of International Importance (DCCEEW, 2024q).		within the monitoring area (Figure 4-21), including: • Corner Inlet • Glenelg Estuary and Discovery Bay Wetlands • Port Phillip Bay (Western Shoreline) and Bellarine Peninsula • Piccaninnie Ponds Karst Wetlands • Western Port
	Wetlands of National Importance	Nationally Important Wetlands	Aggregation, foraging and nursery habitat for marine life	-	Not present The operational area does not intersect any Nationally Important Wetlands.	✓	Present Nationally Important Wetlands with marine or coastal interface were identified in the PMST to be located within the monitoring area (Figure 4-21), including: • 16 Victorian Nationally Important Wetlands: – Aire River – Anderson Inlet – Corner Inlet – – Glenelg Estuary – Glenelg River – Lake Connewarre State Wildlife Reserve – Lower Aire River Wetlands – Lower Merri River Wetlands – Mallacoota Inlet Wetlands – Mud Islands

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							– Powlett River Mouth – Princetown Wetlands – – Shallow Inlet Marine & Coastal Park – Swan Bay & Swan Island – Western Port – Yambuk Wetlands • One South Australian Nationally Important Wetlands: – Piccaninnie Ponds • 1 NSW Nationally Important Wetland – Nadgee Lake and tributary wetlands – • 4 Tasmanian Nationally Important Wetlands: – Pearshape Lagoon 1 – Pearshape Lagoon 2 – Pearshape Lagoon 3 – Pearshape Lagoon 4
	Heritage	Underwater Heritage (wrecks and aircraft)	Historic significance	-	Not present The operational area does not intersect any known historic shipwrecks or aircraft.	✓	Present There are a large number of shipwrecks within the monitoring area. Wrecks closest to the operational area (Figure 4-22), including: • Alfred ~0.04 km* from the operational area • Falls of Halladale ~6 km from the operational area.

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							** The position given for the wreck has been confirmed to be a search area centrepoint; these are provided when the location of a wreck is unknown (pers comm Heritage Victoria 2024). Written records further indicate the Alfred is likely closer to Warrnambool, and not relevant to the operational area of the Activity.* There are protected areas for fragile and significant historic shipwrecks in Victorian waters.
		World Heritage Properties Commonwealth Heritage Places National Heritage Places	Protection of environmental and cultural heritage.	-	Not Present There are no World Heritage Properties in the operational area (DCCEEW 2025f). There are no marine or coastal places on the Commonwealth Heritage list in the operational area (DCCEEW 2025g). There are no National Heritage Places in the operational area (DCCEEW 2025h).	✓	Present There are no World Heritage Properties in the monitoring area (DCCEEW 2025f). There are no e Commonwealth Heritage Places within the monitoring area (DCCEEW 2025g) (Figure 4-23), including: There are 2 listed National Heritage place within the monitoring area (DCCEEW 2025h) (Figure 4-24) including: • Great Ocean Road and Scenic Environments • Point Nepean Defence and Quarantine Station Area.
Socio-economic Systems	Commercial Fisheries	Commonwealth managed	Economic benefit Water quality	✓	Present The operational area intersects the management areas for 6 Commonwealth-managed fisheries (Figure 4-25 to Figure 4-28): • Eastern Tuna and Billfish Fishery • Eastern Skipjack Fishery	✓	Present The monitoring area intersects the management areas for 9 operating Commonwealth-managed fisheries (Figure 4-25 to Figure 4-28): • Bass Strait Central Zone Scallop Fishery • Eastern Skipjack Fishery

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
					• Small Pelagic (western sub-area) Fishery • Southern and Eastern Scalefish and Shark Fishery (SESSF) • Southern Bluefin Tuna Fishery • Southern Squid Jig Fishery However, possible activity around the operational area is expected for the SESS – Shark Gillnet sub-sector and likely activity in the Southern Jig Squid Fishery per comms Event ID 2025 0520 192039 1043, Appendix 8.		• Eastern Tuna and Billfish Fishery • Small Pelagic Fishery • Southern and Eastern Scalefish and Shark Fishery (SESSF) (including sub-sectors) • Southern Bluefin Tuna Fishery • Southern Tuna and Billfish Fishery • Southern Squid Jig Fishery • Western Skipjack Fishery.
		State Managed – Victoria Tasmania South Australia New South Wales	Economic benefit Water quality	✓	Present Victorian fisheries are managed by DJSIR (Fisheries) and may overlap Commonwealth fisheries areas. The operational area intersects the management areas for the following 7 state-managed fisheries (Figure 4-29 to Figure 4-32), including: • Abalone • Giant crab • Multi-species Ocean • Octopus • Ocean scallop • Rock lobster • Wrasse	✓	Present Victorian fisheries are managed by DJSIR (Fisheries) and may overlap Commonwealth fisheries areas. The monitoring area intersect the management areas for the following 8 Victoria state-managed fisheries(Figure 4-29 to Figure 4-32), including:: • Abalone • Giant crab • Inshore trawl • Ocean general • Octopus • Pipi • Ocean scallop • Rock lobster

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area	Monitoring Area
				However, likely or definite activity around the operational area is only expected for the southern rock lobster (Figure 4-30), giant crab (Figure 4-29), wrasse (Figure 4-30) and multi-species ocean (Figure 4-29).	• Wrasse. Tasmanian fisheries are managed by NRE Tas and may overlap Commonwealth fisheries areas. The monitoring area i intersects the management areas for the following 5 Tasmanian state-managed fisheries (Figure 4-33 to Figure 4-36): • Abalone • Giant crab • Marine plant* • Rock lobster • Scalefish **Spatial data has been requested for this fishery. However, no spatial data is available or has been provided for this fishery at the time of this EP development (July, 2025).* South Australian fisheries are managed by DPIRD and may overlap Commonwealth fisheries areas. The monitoring area is likely to intersect the management areas for the following 3 state-managed fisheries (Figure 4-37): • Charter Boat • Rock lobster • Scalefish NSW fisheries are managed by DPI NSW and may overlap Commonwealth fisheries areas. The monitoring area is likely to intersect the

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							management areas for the following 9 NSW state-managed fisheries (Figure 4-38 to Figure 4-40): • Abalone • Estuary General • Lobster • Ocean Hauling • Ocean Trap and Line • Ocean Trawl • S37 Permit • Sea Urchin and Turban Shell • Southern Fish Trawl.
	Recreational Fisheries	State-managed	• Community • Recreation • Water quality	✓	Present Recreational fishing includes boat fishing, using rod and line. Game fishing can include additional equipment such as fighting belts, gimbals and outriggers (Game Fishing Association Australia 2025a). Common offshore fish species caught by recreational and game fishers include: • Mackerel • Tuna • Groper • Shark. Most recreational fishing typically occurs in nearshore coastal waters (DAFF, 2024)	✓	Present Recreational fishing includes rock, beach, boat and estuary fishing, using rod and line. Fishing licences are required for inland and ocean fishing. Charter fishing operations were confirmed to occur in the monitoring area including from Port Campbell, Apollo Bay and Warrnambool by VRFish consultation for the ECSP OPP. Common nearshore fish species caught by recreational fishers include: • Tiger flathead • Bream • Snapper • Australian Salmon • Lobster

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
					(shore or inshore vessels) and within bays and estuaries. Recreational fishing activity is expected to be minimal in the operational area. Deep dropline fishing occurs in water waters deeper than those found in the operational area e.g. over 250m (AFMA 2023).		Fishing charter operators provide deeper water recreational fishing opportunities (such as tuna fishing). Game fishing occurs across the monitoring area from Port MacDonnell to Portland and Narooma (Game Fishing Association Australia 2025b), 15,287 recreational fishing trips left surveyed Victorian ramps in 2018 – 2019. 26% of these trips targeted Southern Bluefin Tuna. Portland accounted for 82% of the Southern Bluefin Tuna harvest. Five larger Southern Bluefin Tuna were caught from Port Campbell during this period (Institute for Marine and Antarctic Studies, University of Tasmania, 2020). Deep dropline fishing uses electric winches and heavy-duty rods. This fishing occurs within deeper waters e.g. over 250m with target species including (AFMA 2023): • Blue-eye trevalla • Pink ling • Ribaldo • Ocean perch.
	Recreation and Tourism	Victoria	• Economic benefit • Community • Recreation • Water quality	✓	Not present Key activities include sight-seeing, surfing and fishing however, these are generally land-based or near-shore activities not within the deep offshore waters of the operational area.	✓	Present Key activities include sight-seeing, surfing, diving and snorkelling and fishing however, these are generally land-based or near-shore activities and are not impacted by the proposed exploration activities.

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
							The activity is located in an area adjacent the Otway coastline, which is located on the Great Ocean Road, a popular tourist drive.
	Coastal Settlements	Victoria	• Economic benefit • Community engagement • Recreation	✓	Not present The operational area does not include coastal and onshore environments. Peterborough is the nearest town to the operational area (Figure 4-41).	✓	Present The monitoring area runs along the Victorian coastline and parts of South Australia and NSW resulting in a large number of coastal settlements being located within the monitoring area. The communities of Princetown, Port Campbell, Peterborough, Warrnambool, Port Fairy and Portland are located closest to the proposed activities.
	Industry	Shipping	• Safe navigation	✓	Present The operational area is located at the northern extremity of areas with high traffic volumes. There are no designated shipping lanes in the vicinity of the operational area, however local commercial fishing vessels utilise the area (Figure 4-42).	✓	Present The South-east Marine Region is one of the busiest shipping regions in Australia and Bass Strait is one of Australia's busiest shipping routes (Figure 4-42).
		Offshore Renewable Energies	• Economic benefit	✓	Present No declared areas overlap with the operational area (Figure 4-43). However one proposed offshore wind farm (Barwon OWF) overlaps with a portion of the operational area. This Activity is in the feasibility stages of development and has not yet been awarded a license.	✓	Present Two areas have been declared within the monitoring area as suitable for the development of offshore renewable energy (Figure 4-43): • Southern Ocean, Victoria - ~20 km west of the operational area • Gippsland, Victoria - ~290 km east of the operational area.

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
		Petroleum Production	• Economic benefit	✓	Present An Amplitude Energy operated gas and condensate pipeline crosses the operational area (Figure 4-44).	✓	Present A number of producing oil and gas wells occur within the monitoring area. Current operators with producing fields in the Otway Basin include Beach Energy (Otway Gas Field Development) and Amplitude Energy (CHN Development). Existing petroleum infrastructure within south-east Australia is displayed in Figure 4-44.
		Petroleum Exploration	• Economic benefit	✓	Present The operational area extends across the existing Petroleum exploration title VIC/P44.	✓	Present Numerous petroleum exploration activities, including seismic surveys and exploration drilling, have been undertaken in the permits of the Otway Basin. The most recent of which was Beach Energy's Artisan-1 exploration well (VIC/P43) in 2021 and Schlumberger Otway Basin 2D Marine Seismic Survey in 2020. Beach Energy production assets including subsea facilities at Geographe and Thylacine Platform are to the southeast of the Amplitude Energy facilities, with the Thylacine export pipeline to shore running parallel. Existing petroleum infrastructure within south-east Australia is displayed in Figure 4-44.
		Defence Activities	• Protection and surveillance	-	Not present There are no defence areas within the operational area.	✓	Present Many training areas, sea dumping sites and UXO sites are located within the monitoring area (Figure 4-45). A number of these are located in and around Port Phillip Bay and Western Port Bay.

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Operational Area		Monitoring Area	
	Other Offshore Infrastructure	Subsea Communication Cables	• Economic benefit	-	Not present There are no subsea communication cables within the operational area.	✓	Present Three subsea communications cables are located within the monitoring area (Figure 4-46): • Bass Strait-1 and Bass Strait-2 • Indigo Central • Basslink. • The East Coast cable and Hawaiki Nui have a landing in Melbourne and are expected to be installed by 2025.
		Desalination Plant	• Water quality	-	Not present There are no desalination plant water intakes within the operational area.	✓	Present Victorian Desalination Project water intake is 800 m offshore at approximately 15 m below the surface off Williamson's Beach Victoria, east of Western Port.

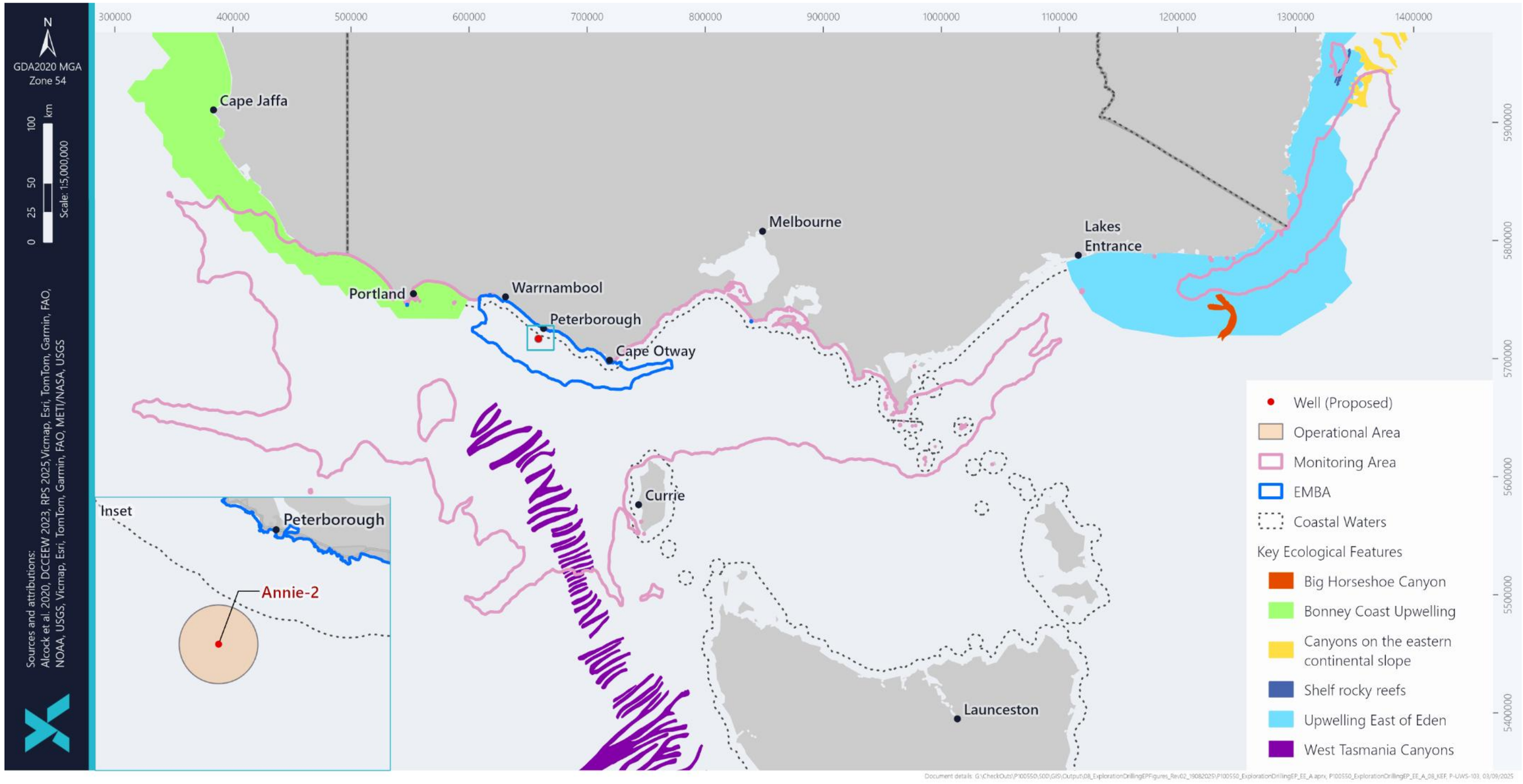


Figure 4-17:KEFs Within the Monitoring Area

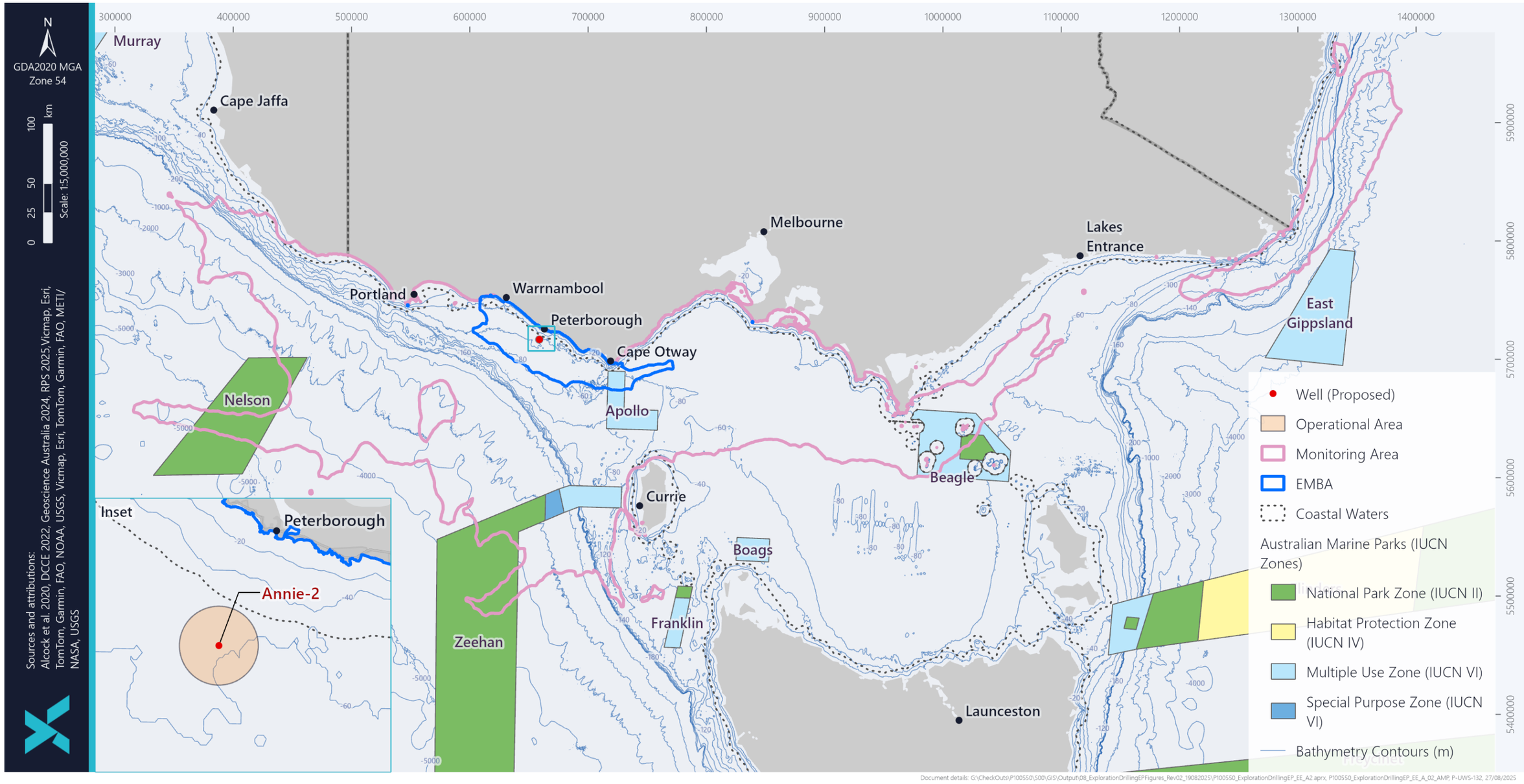


Figure 4-18: Australian Marine Parks (AMPs) Within the Monitoring Area

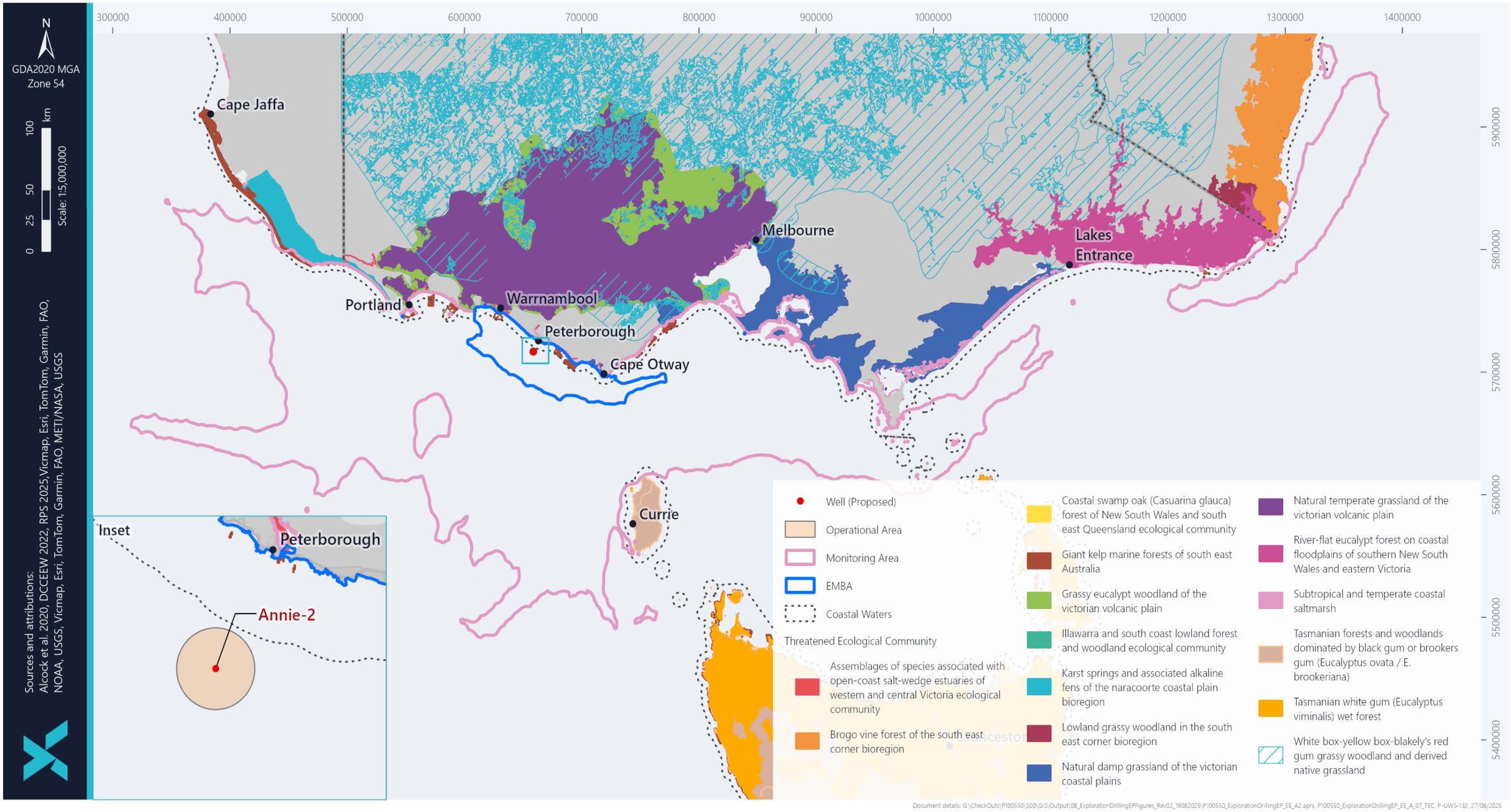


Figure 4-19: Threatened Ecological Communities (TECs) Within the Monitoring Area

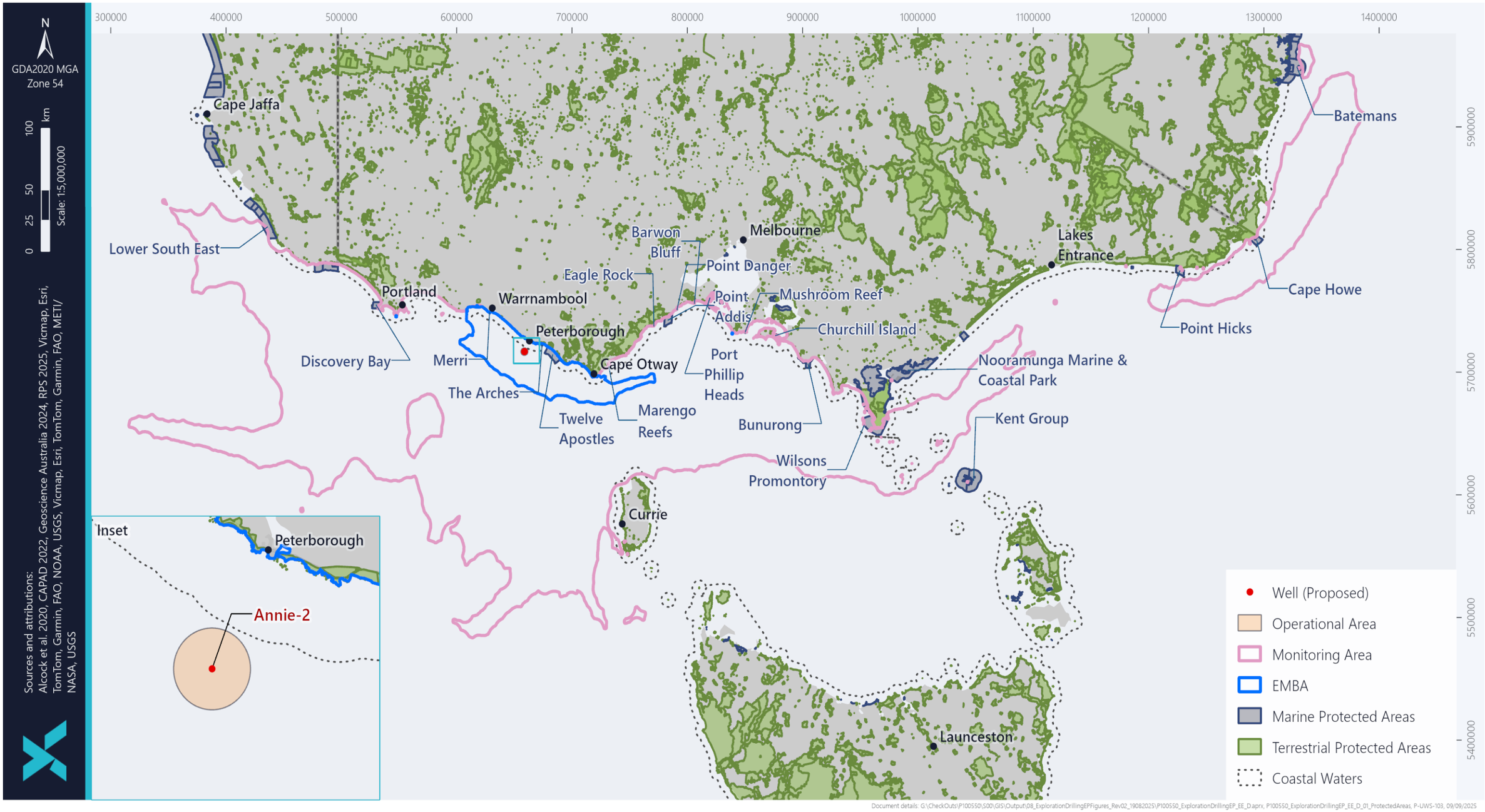


Figure 4-20: State Marine Parks and Terrestrial Protected Areas Within the Monitoring Area

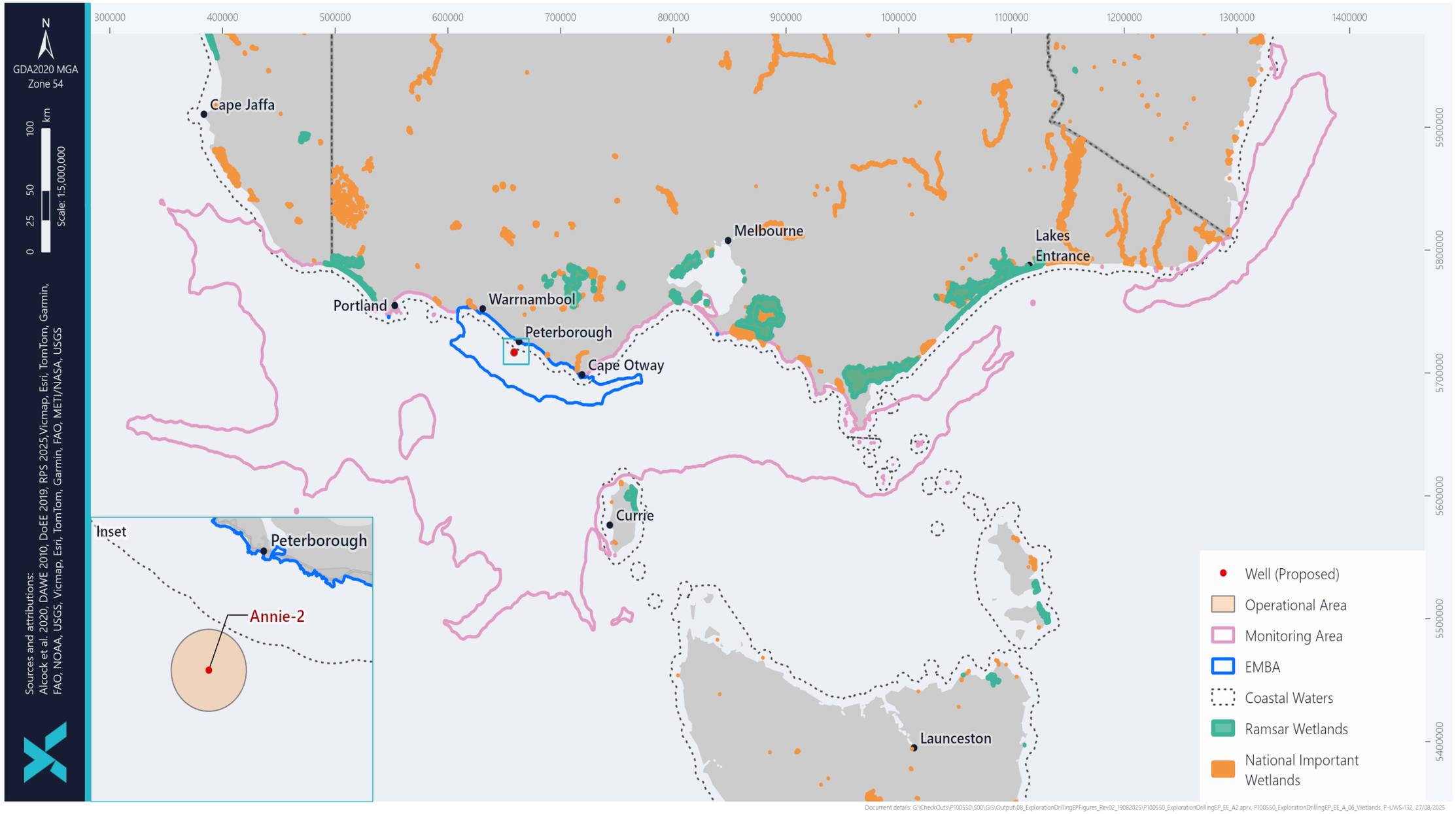


Figure 4-21: RAMSAR Wetlands and Wetlands of National Importance Within the Monitoring Area

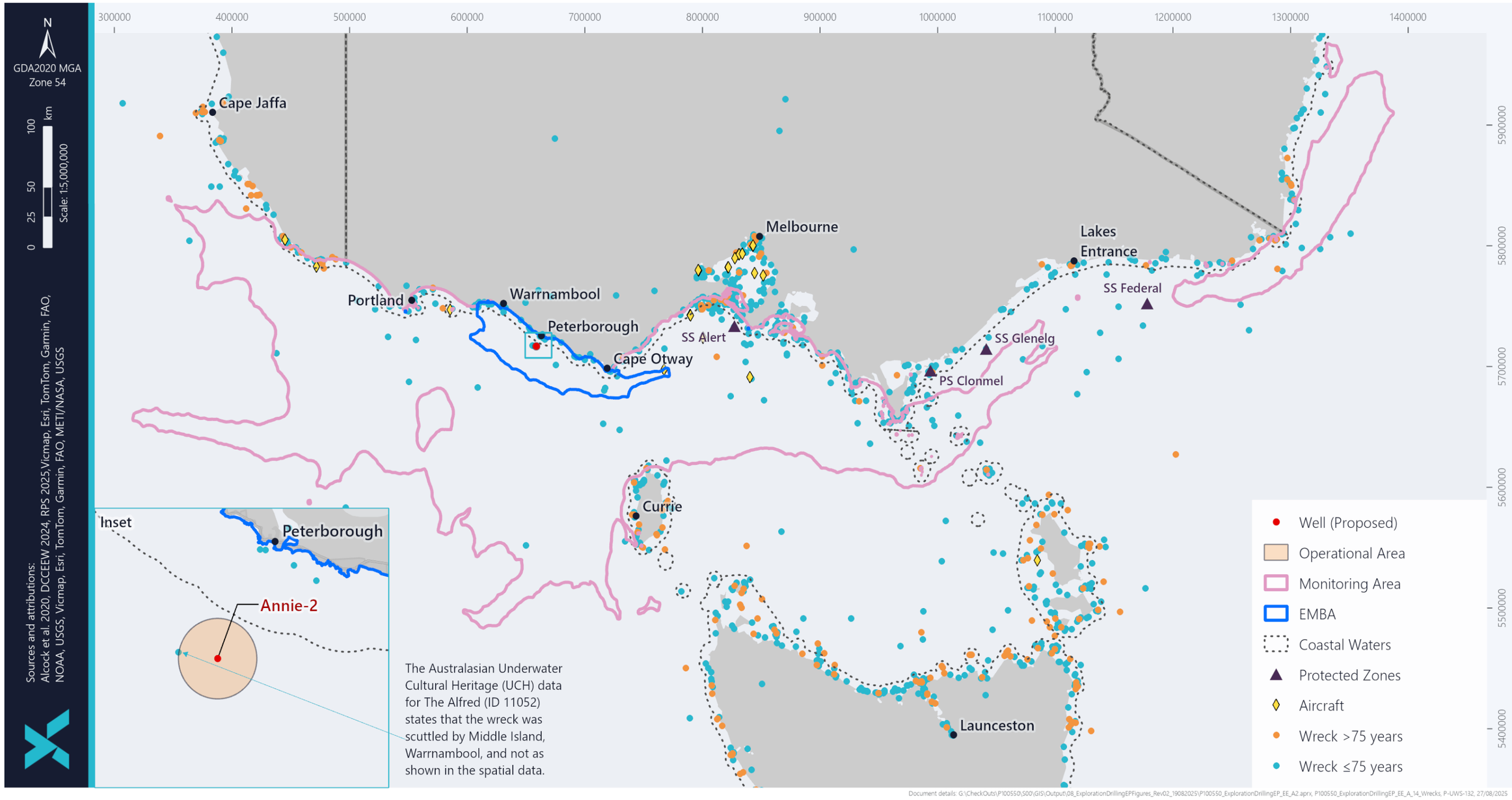


Figure 4-22: Underwater Protected Areas (Wrecks and Aircraft) Within the Monitoring Area

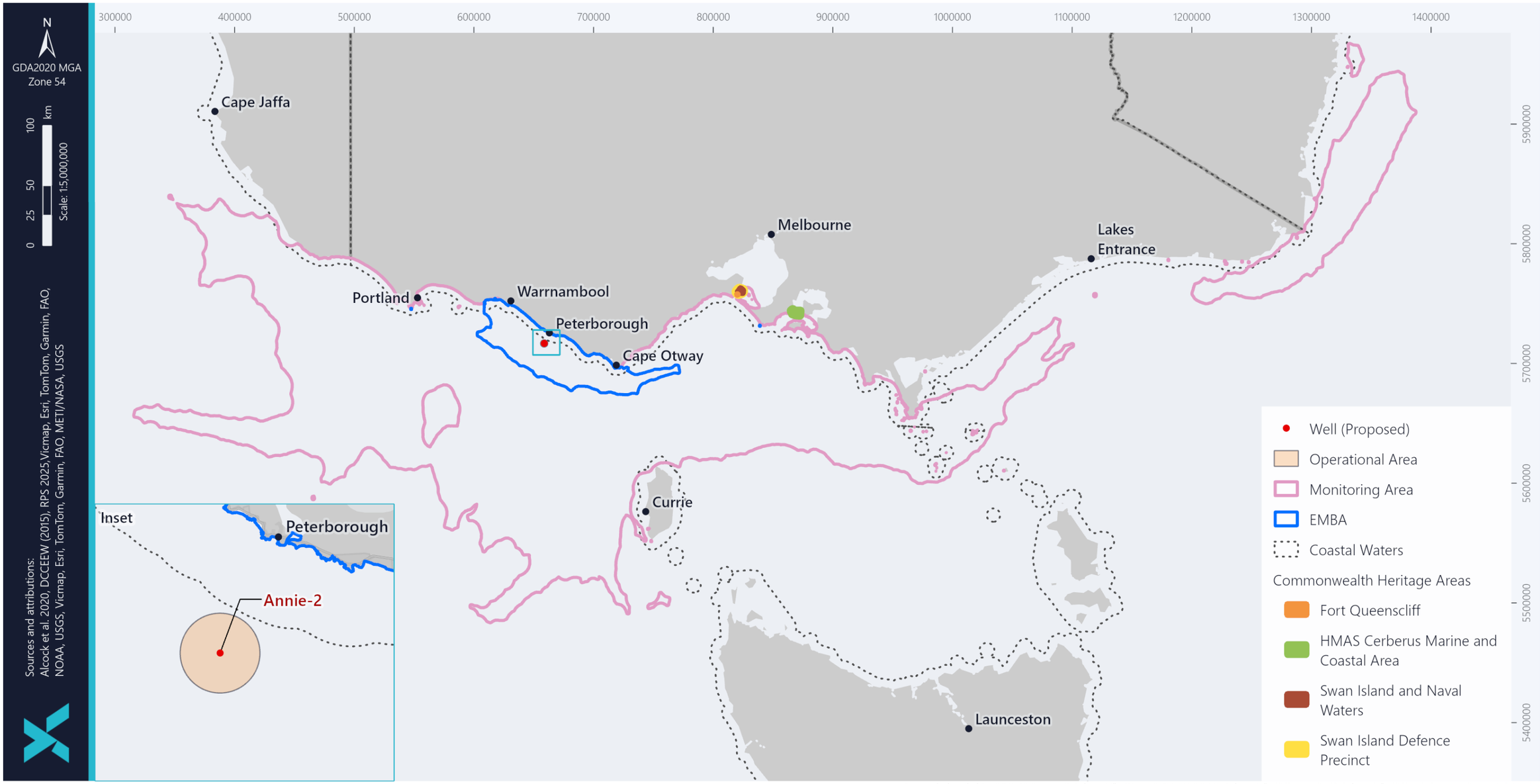


Figure 4-23: Commonwealth Heritage Areas Within the Monitoring Area

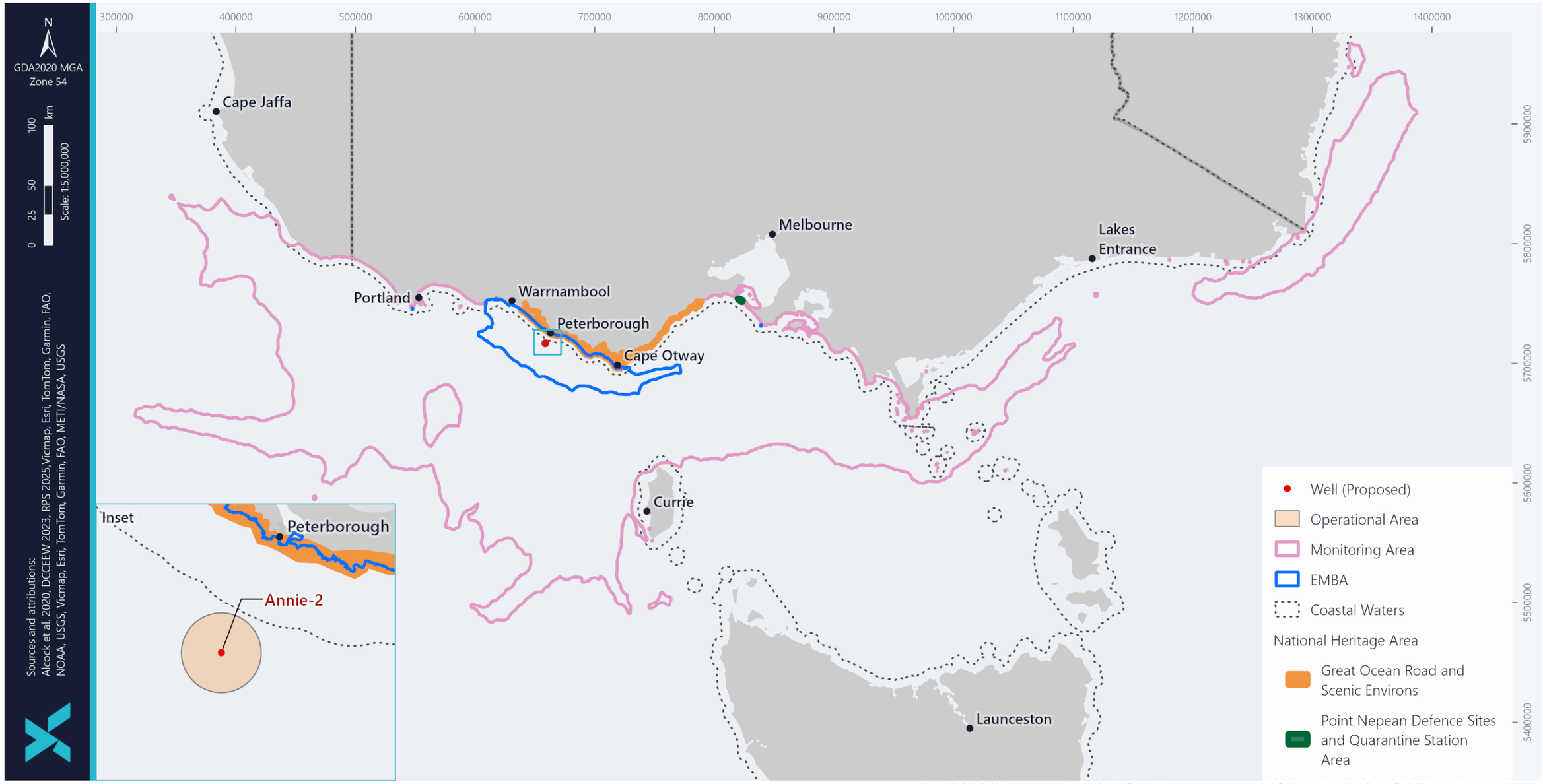


Figure 4-24: National Heritage Areas Within the Monitoring Area

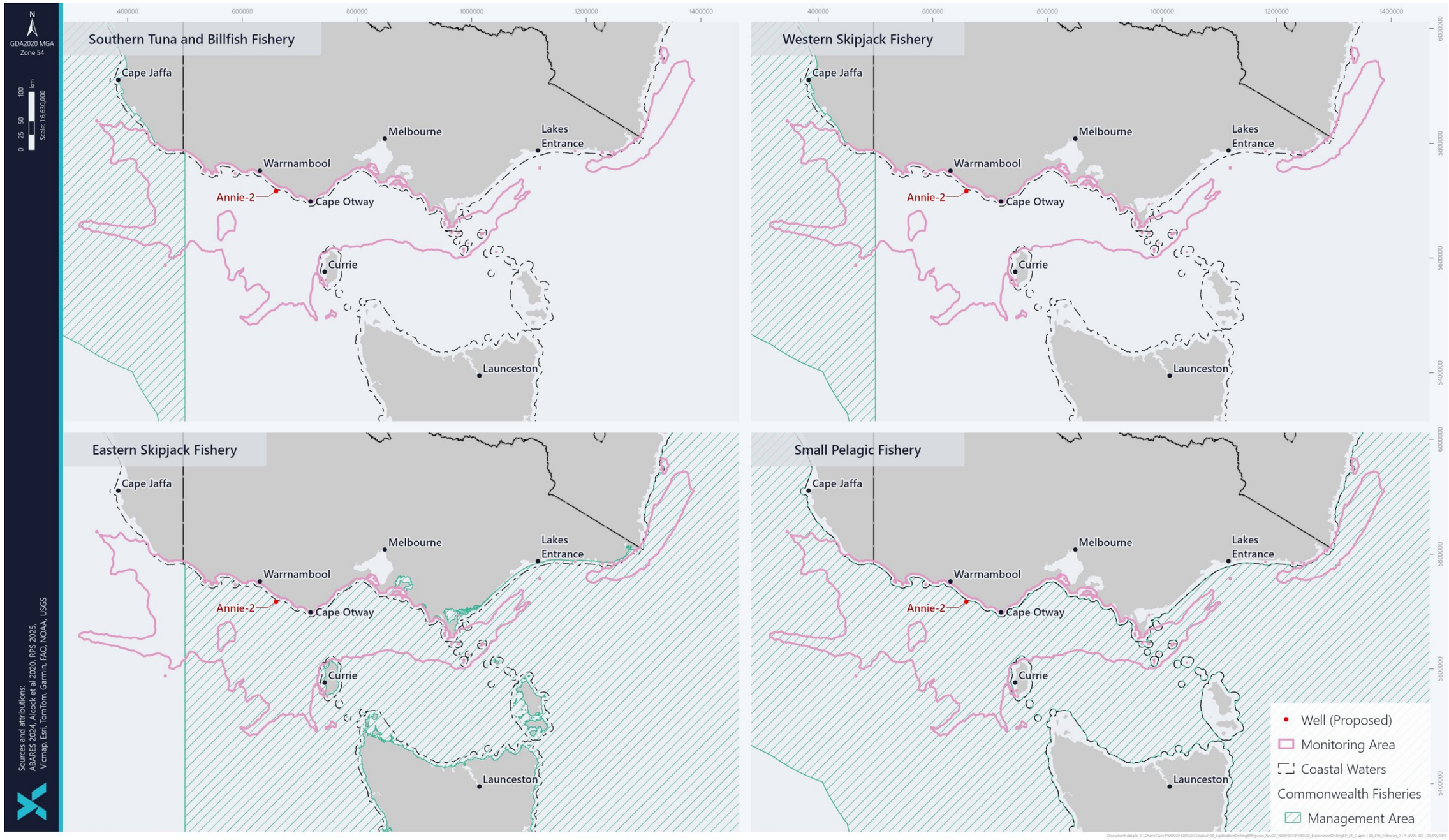


Figure 4-25: Commonwealth Managed Southern Tuna and Billfish Fishery, Western Skipjack Fishery, Eastern Skipjack Fishery, and Small Pelagic Fishery Within the Monitoring Area

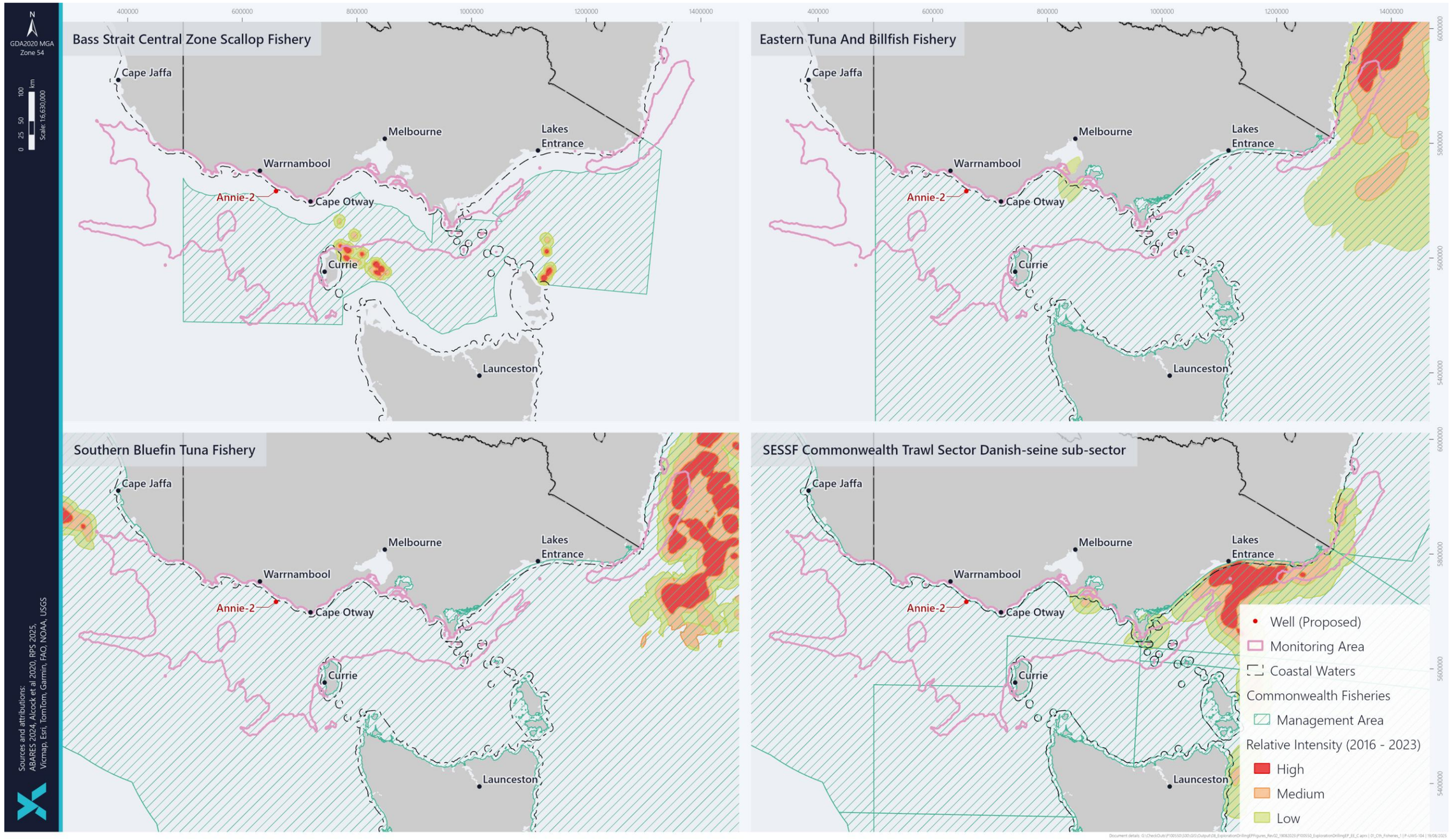


Figure 4-26: Commonwealth Managed Bass Strait Central Zone Scallop Fishery, Eastern Tuna and Billfish Fishery, Southern Bluefin Tuna Fishery, and SESSF Trawl Sector Danish-sein sub-sector Fishery Within the Monitoring Area

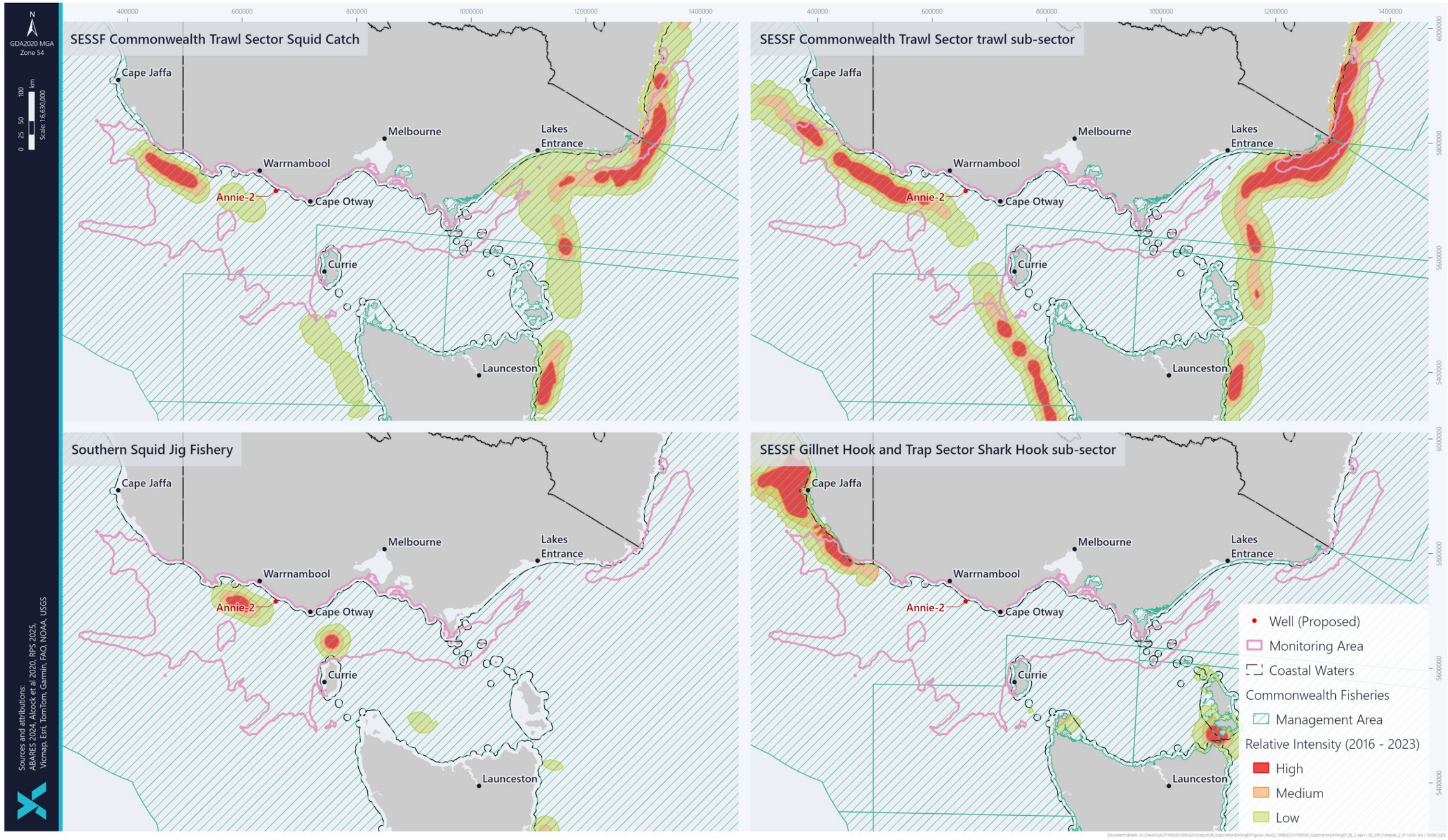


Figure 4-27: Commonwealth Managed SESSF Trawl Sector Squid Catch Fishery, SESSF Trawl Sector trawl sub-sector, Southern Squid Jig Fishery, and SESSF Gillnet Hook and Trap Sector Shark Hook Sub-sector Fishery Within the Monitoring Area

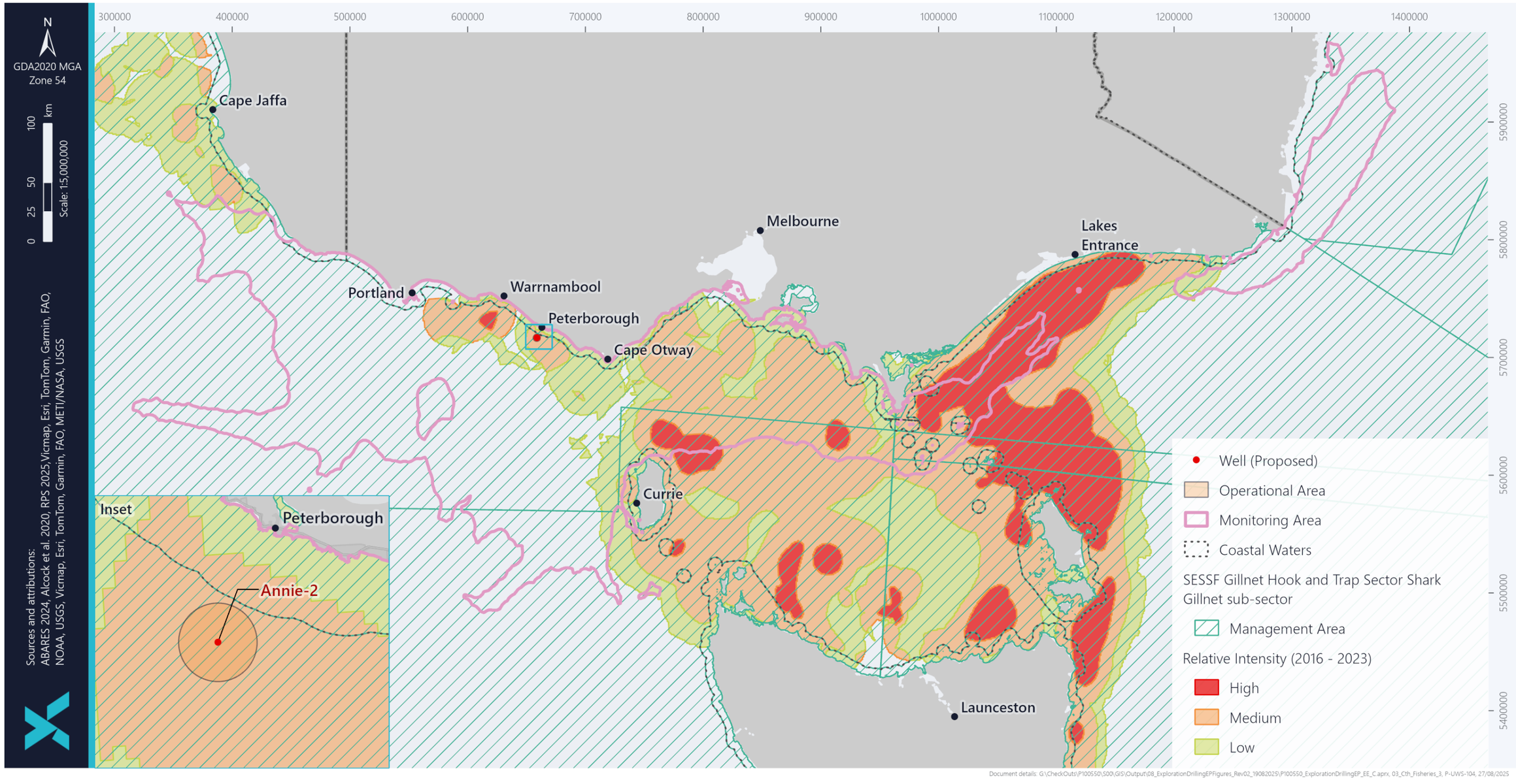


Figure 4-28: Commonwealth Managed SESSF Gillnet Hook and Trap Sector Shark Gillnet Sub-sector Fishery Within the Monitoring Area

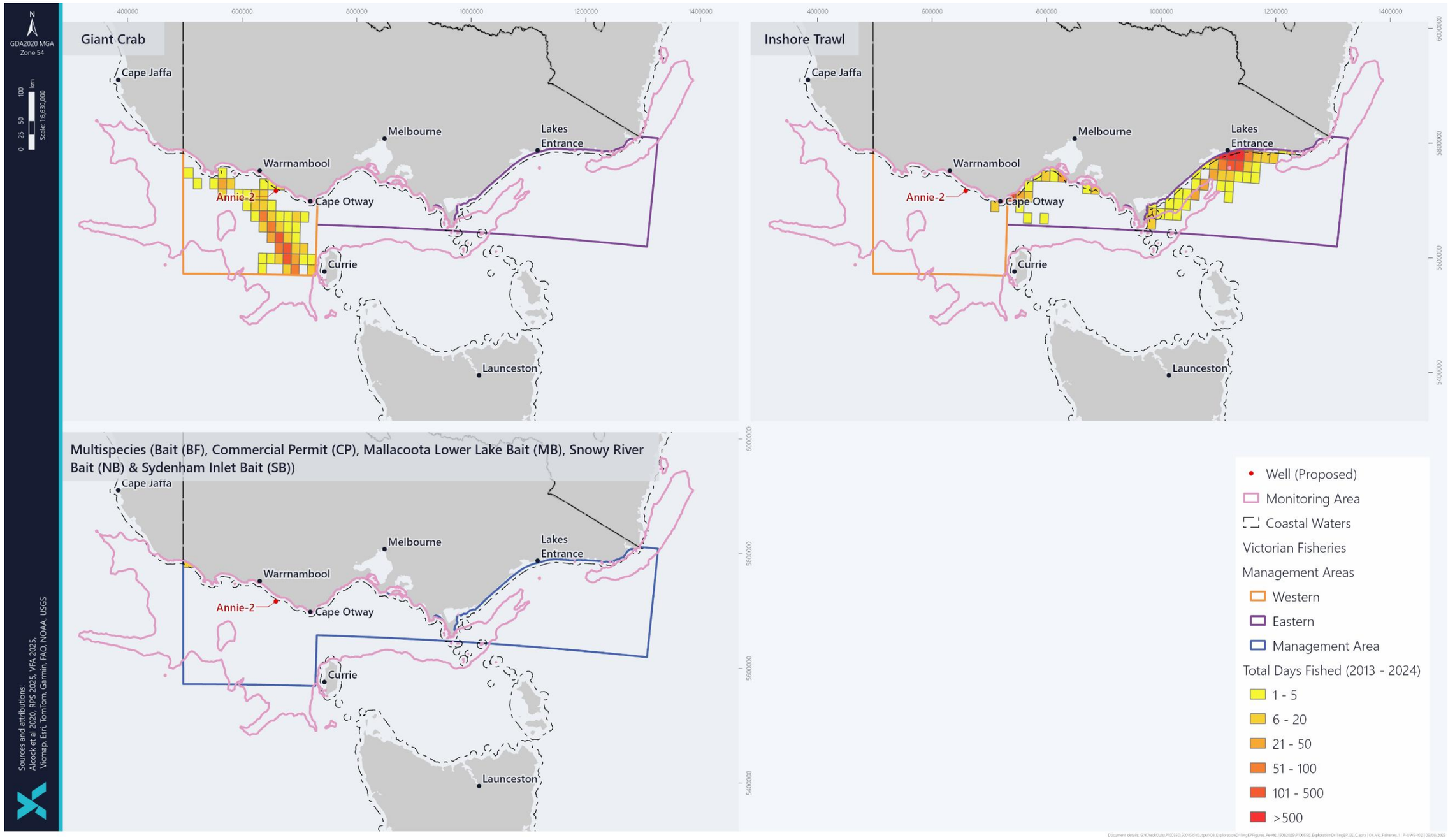


Figure 4-29: Victorian Managed Giant Crab Fishery, Inshore Trawl Fishery, and Multispecies Fishery Within the Monitoring Area

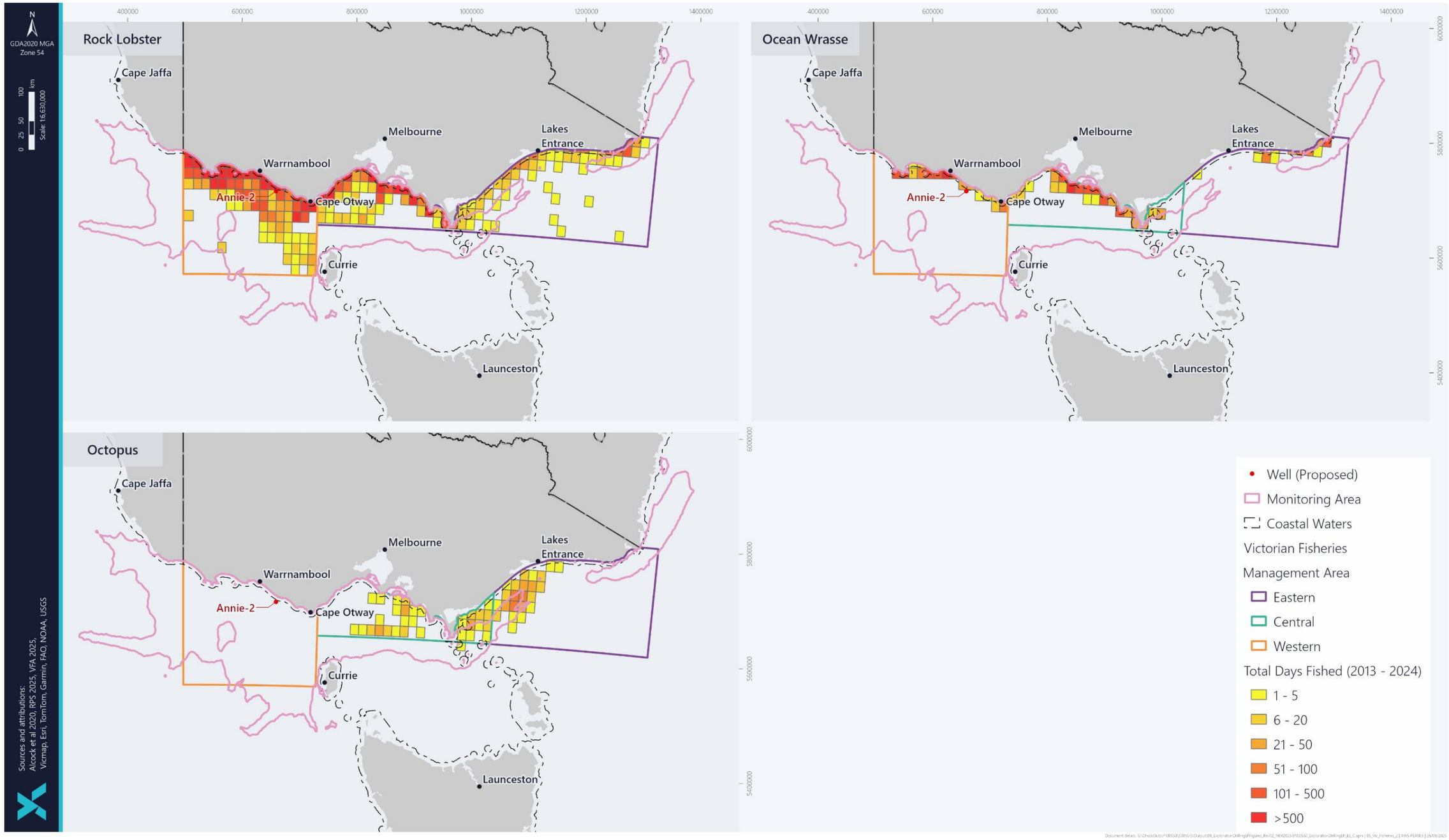


Figure 4-30: Victorian Managed Southern Rock Lobster Fishery, Ocean Wrasse Fishery, and Octopus Fishery Within the Monitoring Area

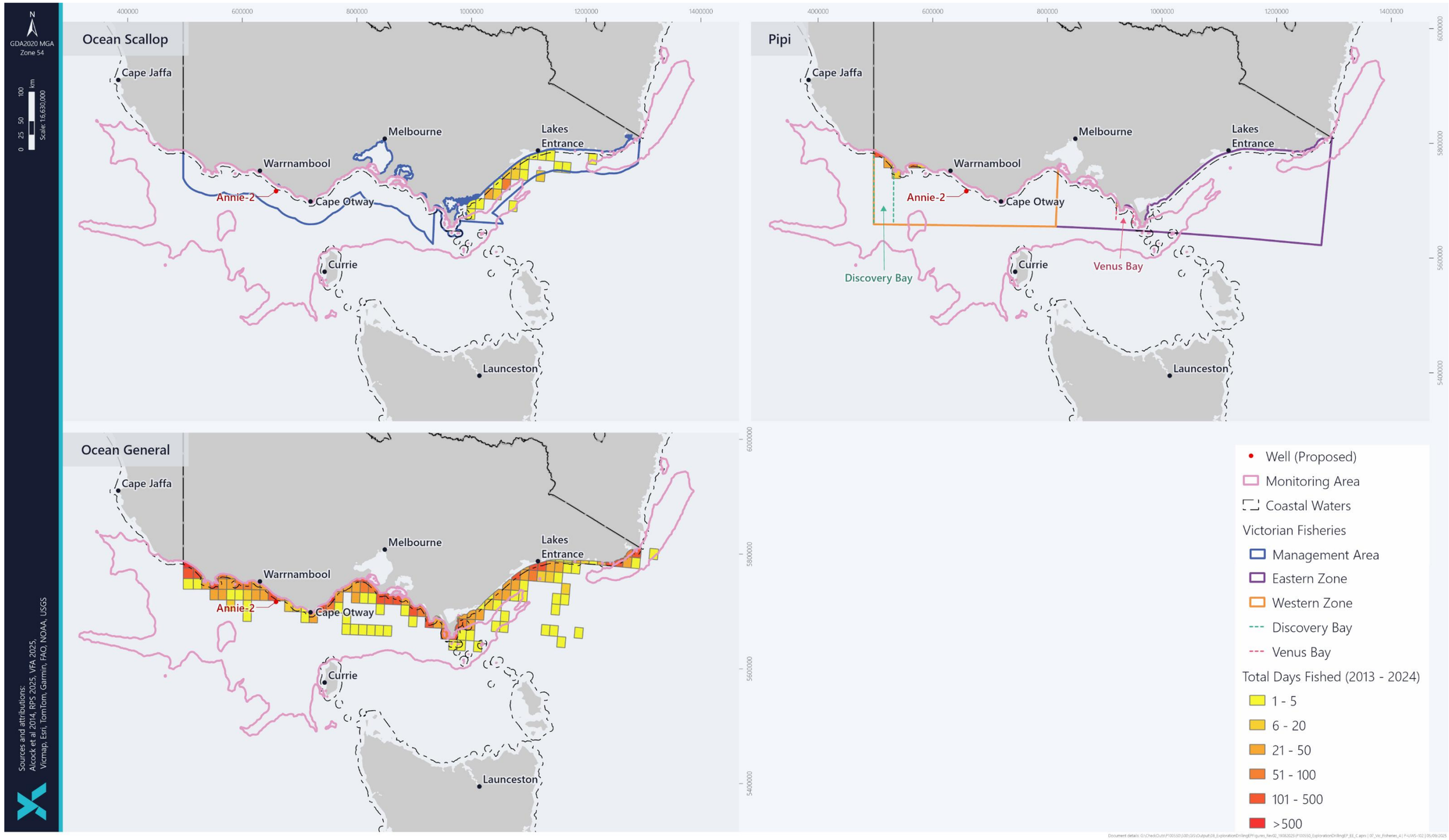


Figure 4-31: Victorian Managed Ocean Scallop Fishery, Pipi Fishery, and Ocean General Fishery Within the Monitoring Area

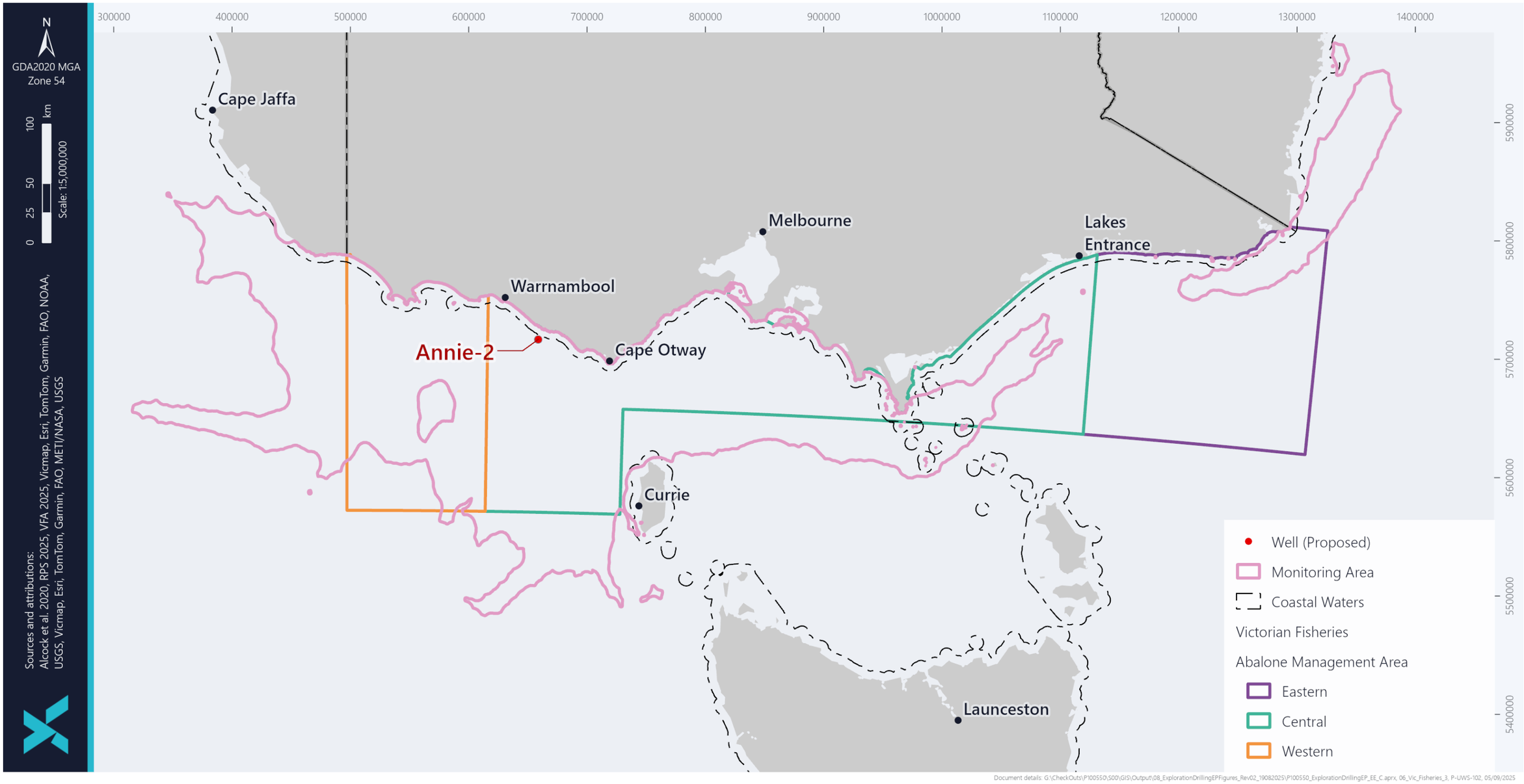


Figure 4-32: Victorian Managed Abalone Fishery Within the Monitoring Area

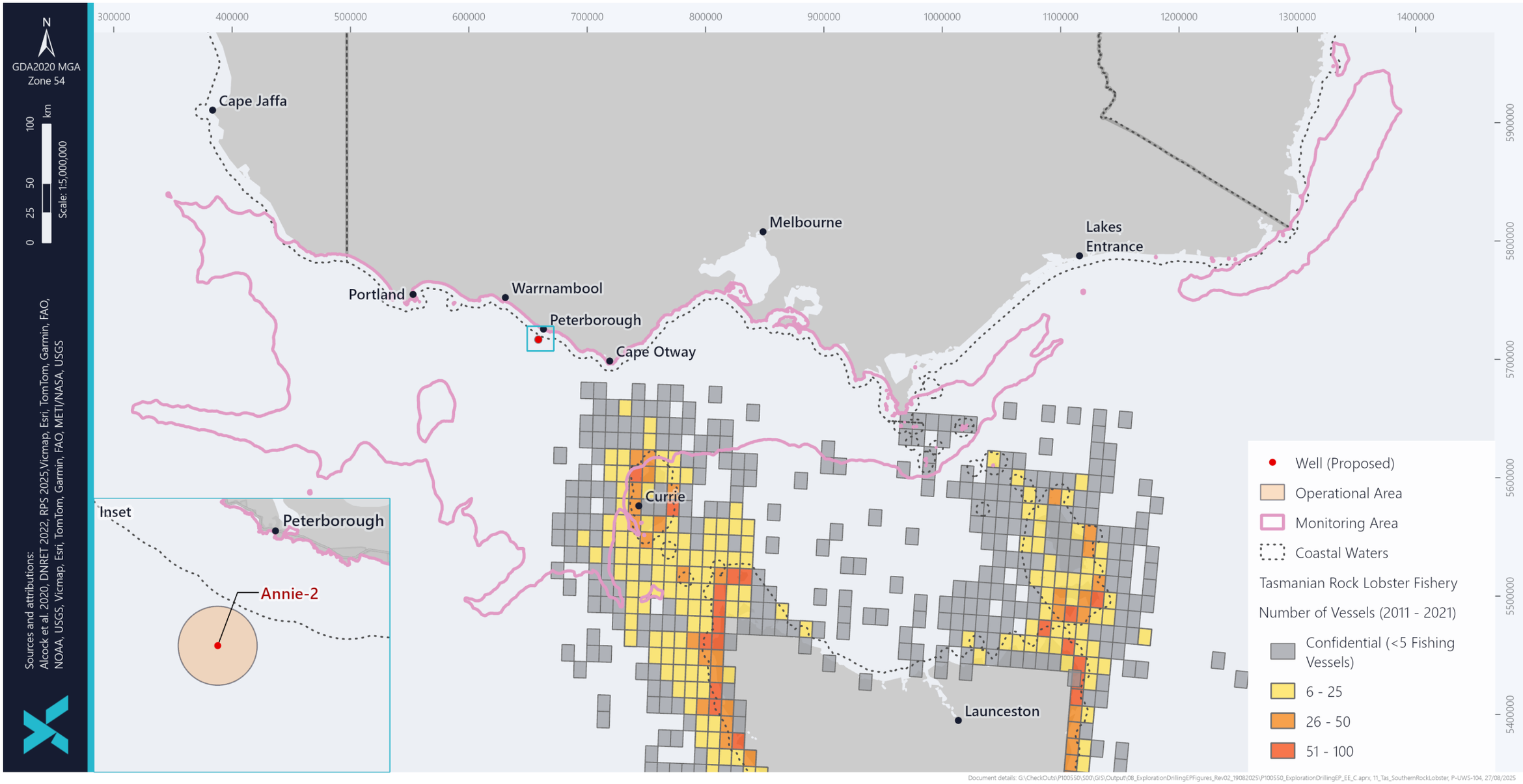


Figure 4-33: Tasmanian Managed Rock Lobster Fishery Within the Monitoring Area

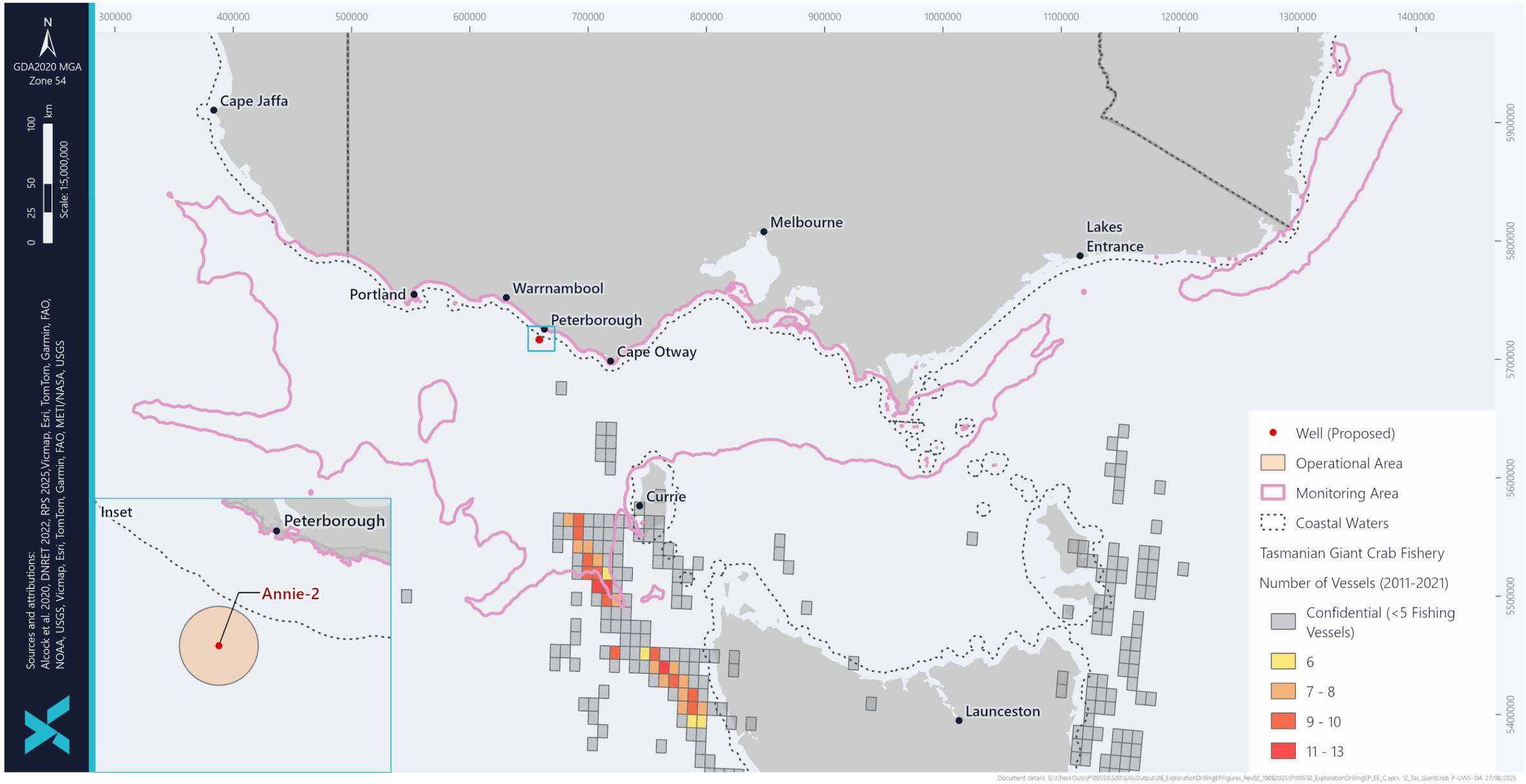


Figure 4-34: Tasmanian Managed Giant Crab Fishery Within the Monitoring Area

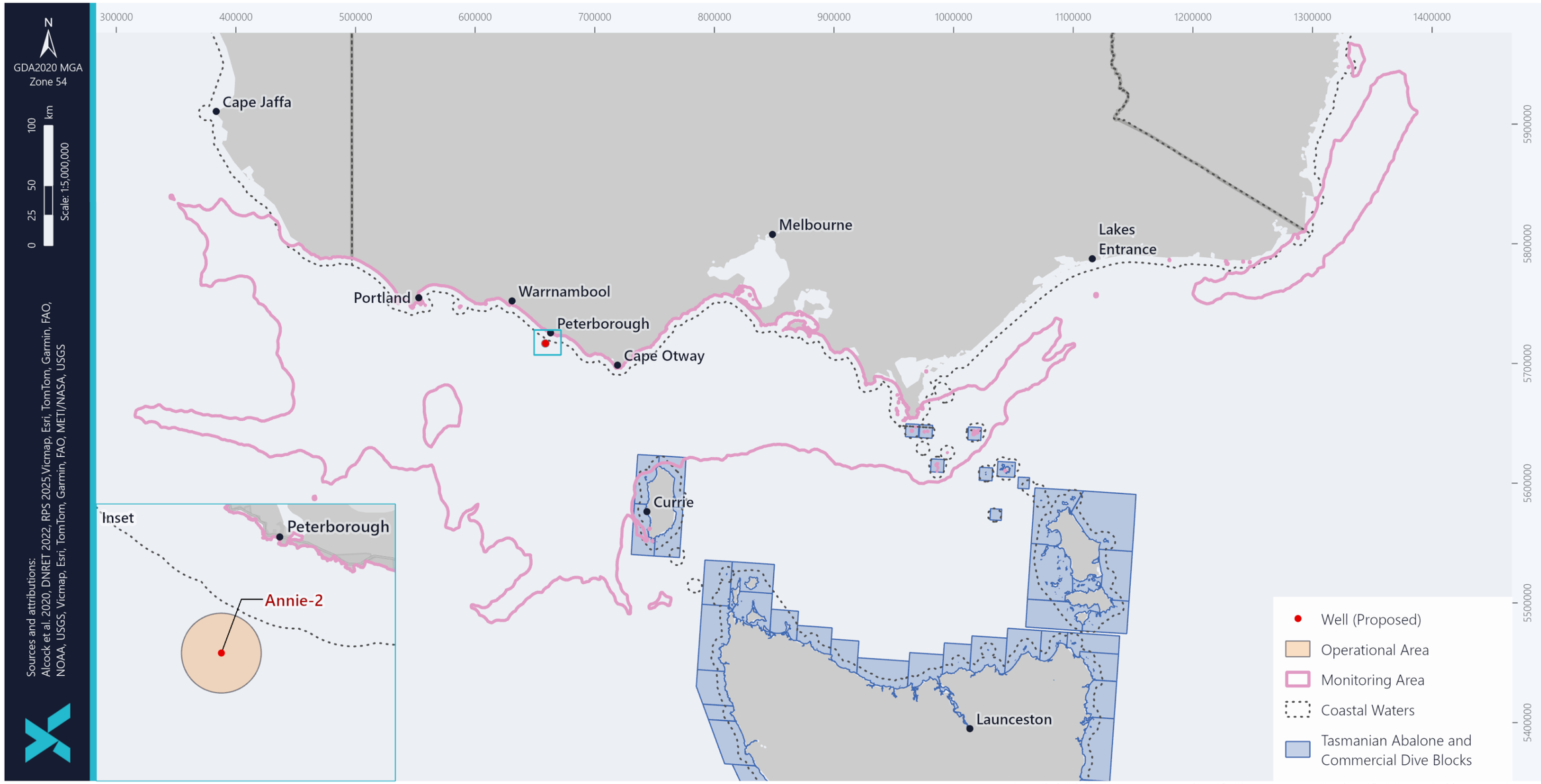


Figure 4-35: Tasmanian Managed Abalone Fishery Within the Monitoring Area

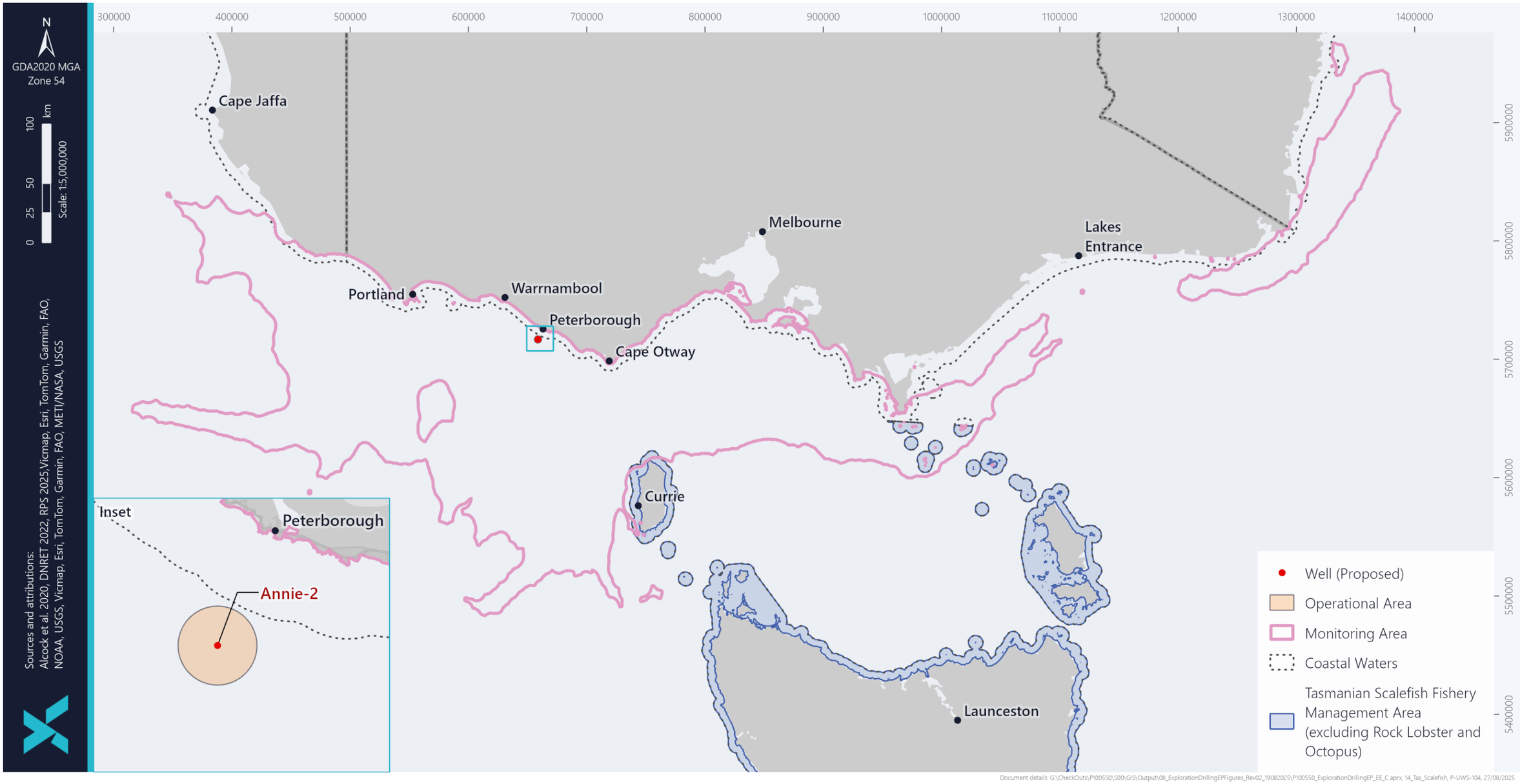


Figure 4-36: Tasmanian Managed Scalefish Fishery Within the Monitoring Area

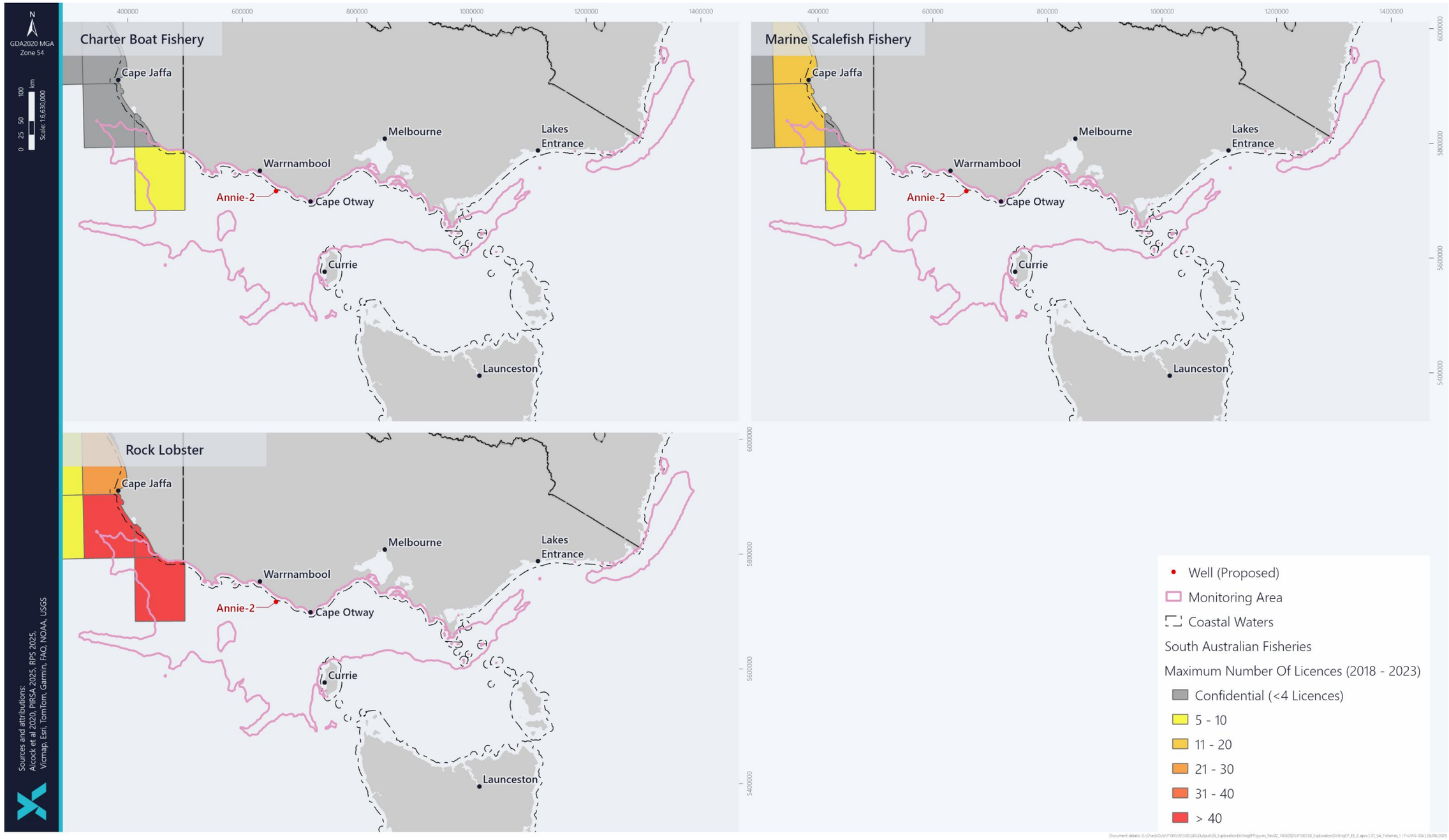


Figure 4-37: South Australian Managed Charter Boat Fishery, Marine Scalefish Fishery, and Rock Lobster Fishery Within the Monitoring Area

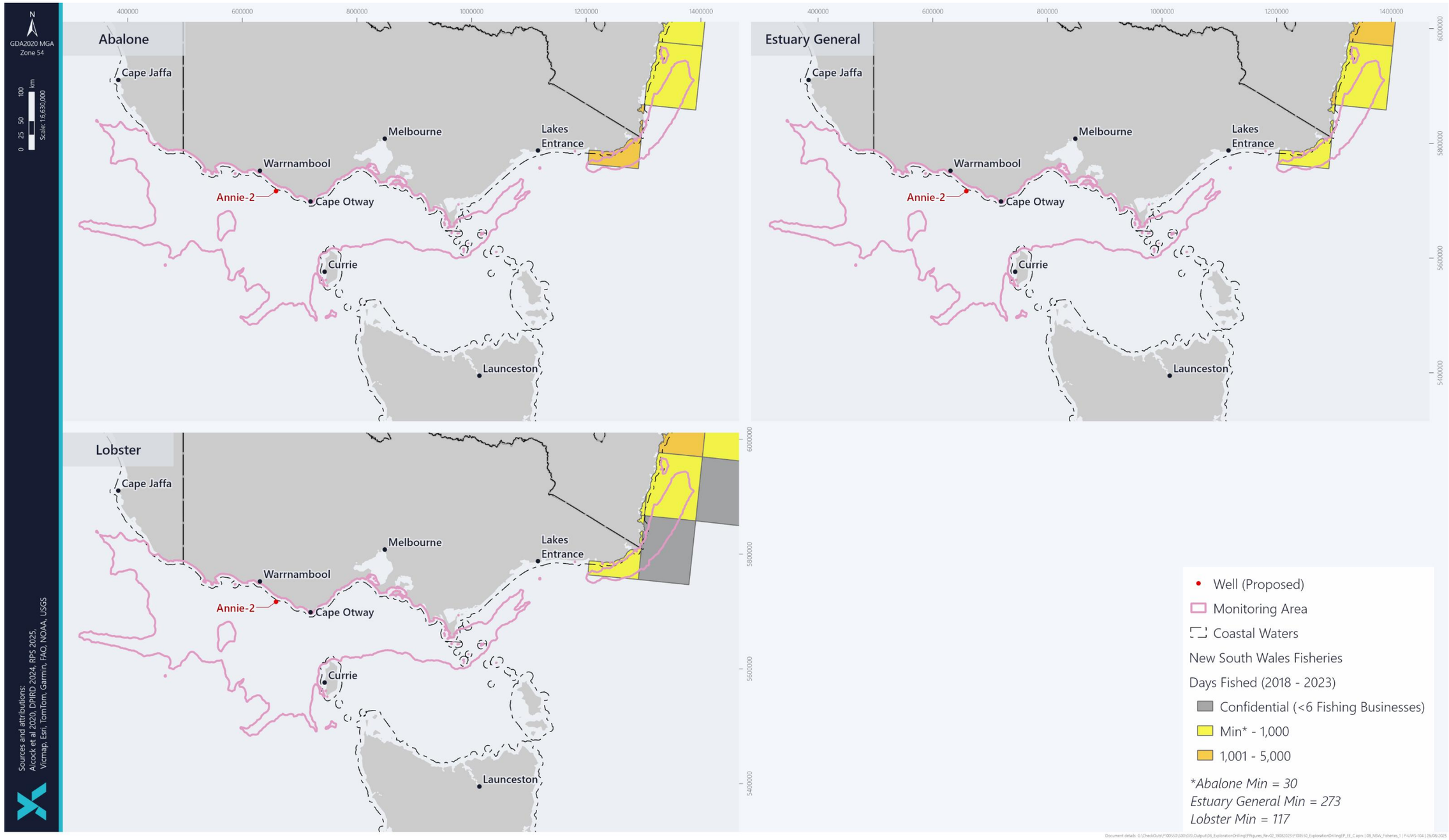


Figure 4-38: NSW Managed Abalone Fishery, Estuary General, and Lobster Fishery Within the Monitoring Area

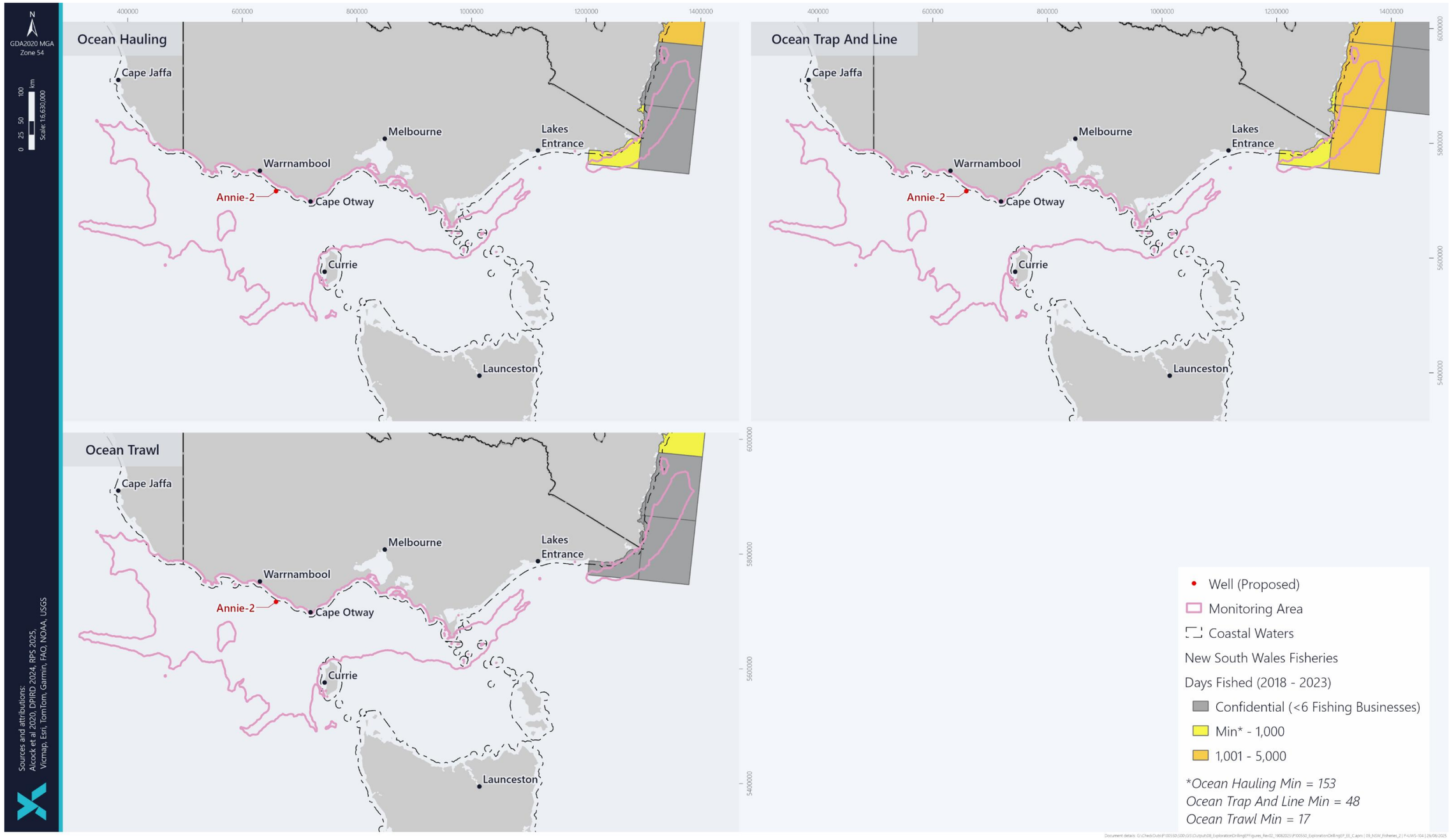


Figure 4-39: NSW Managed Ocean Hauling Fishery, Ocean Trap and Line Fishery, and Ocean Trawl Fishery Within the Monitoring Area

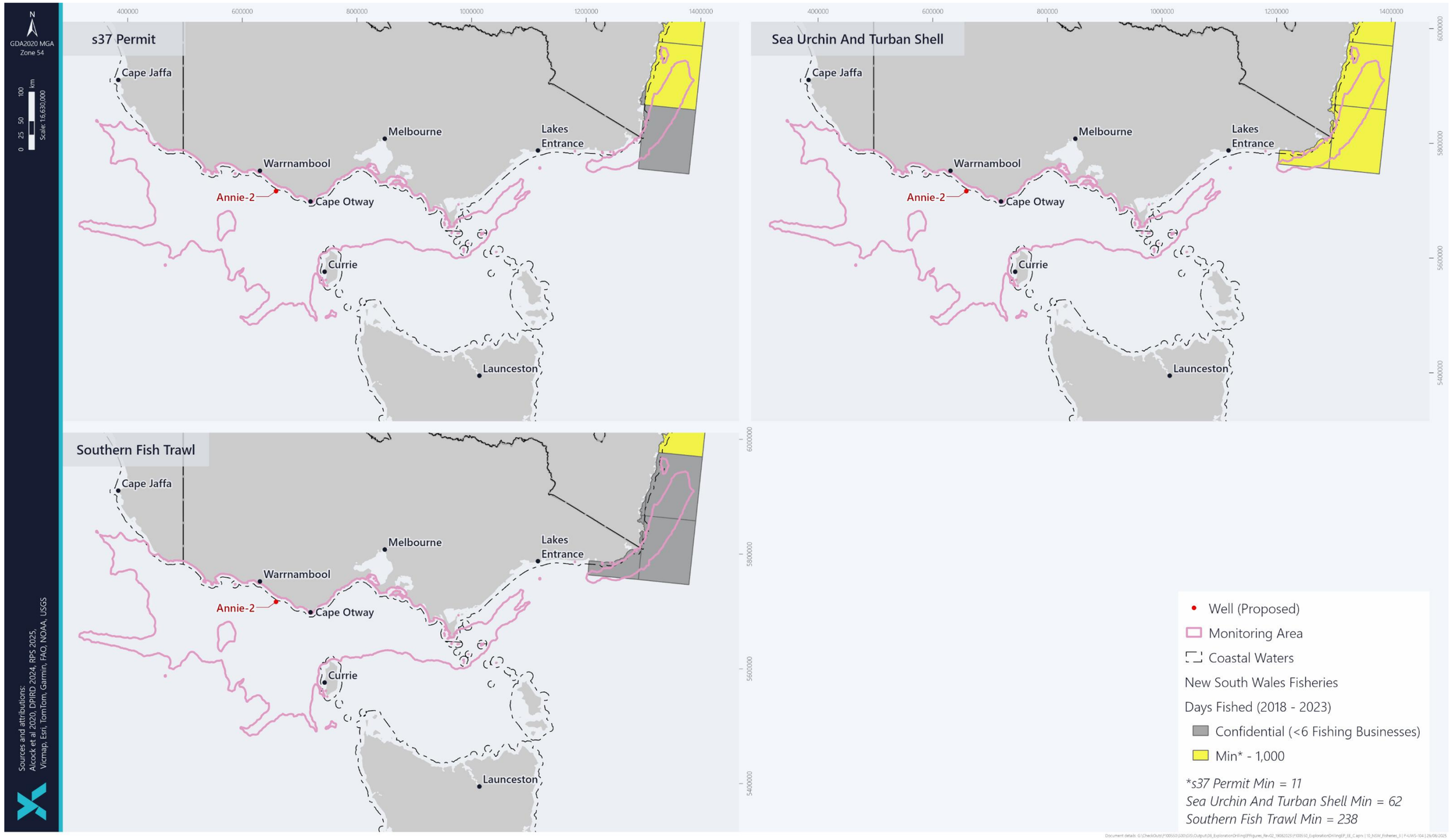


Figure 4-40: NSW Managed s37 Permit Fishery, Sea Urchin and Turban Shell Fishery, and Southern Fish Trawl Fishery Within the Monitoring Area

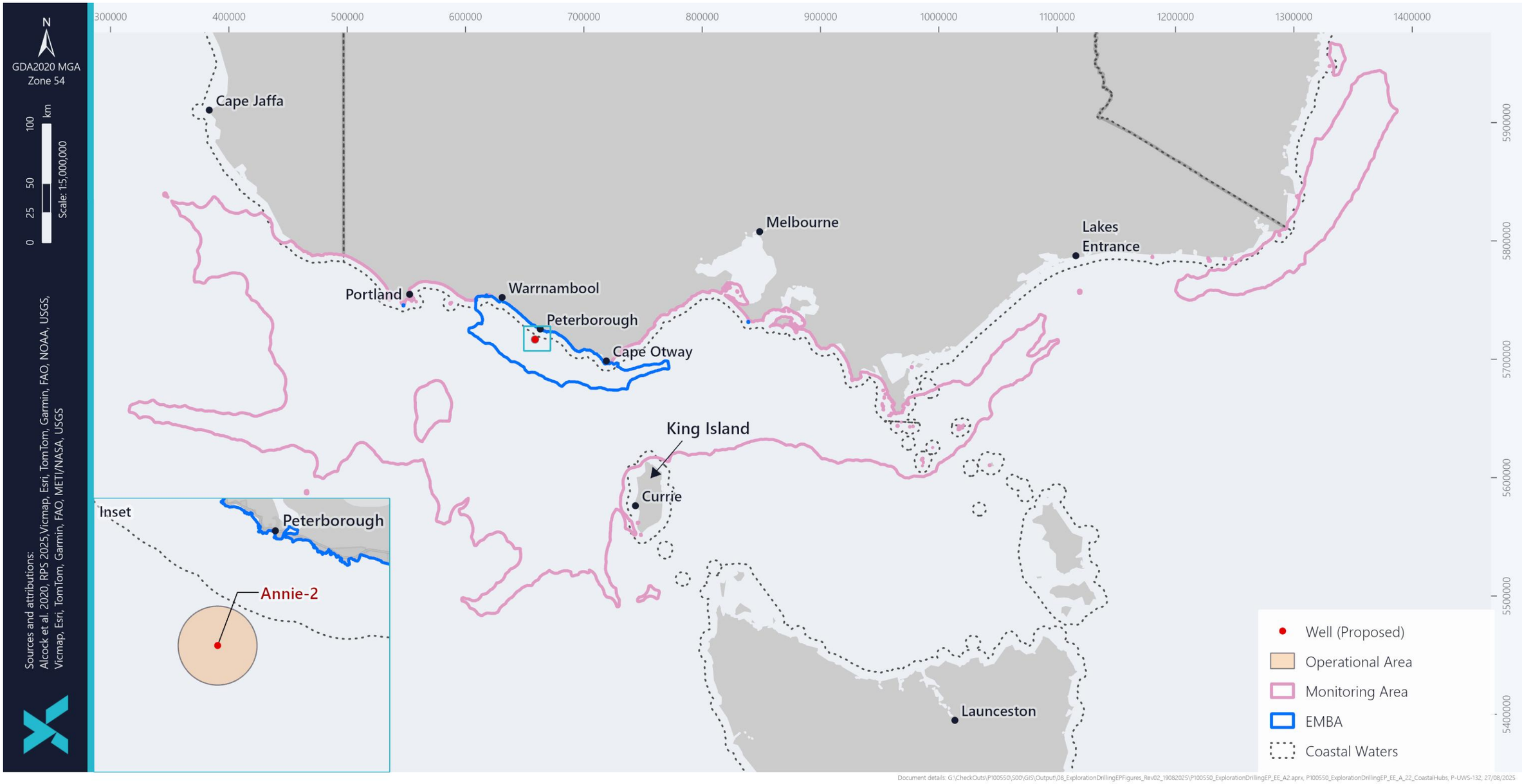


Figure 4-41: Coastal Settlements Within the Monitoring Area

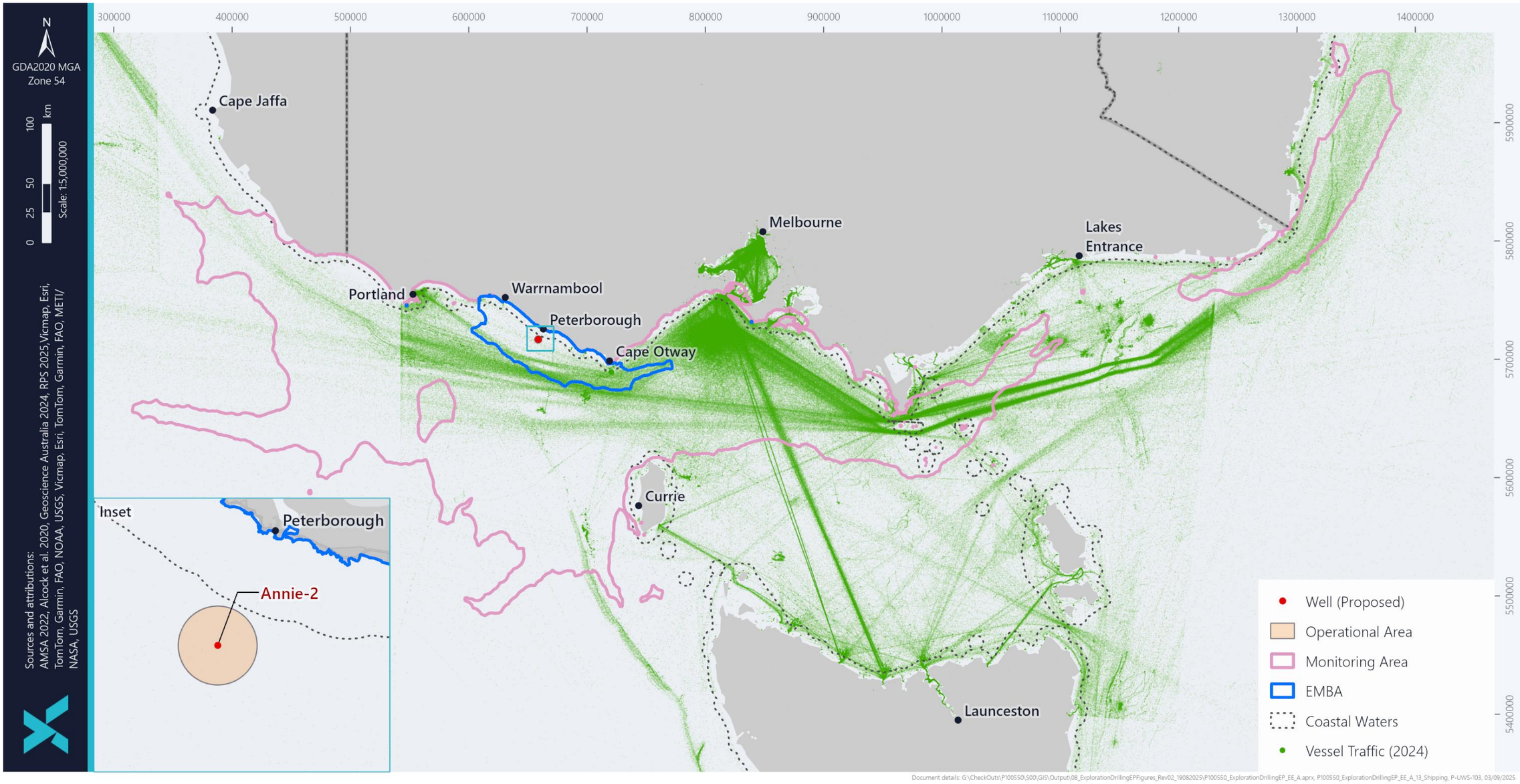


Figure 4-42: Vessel Traffic Within the Monitoring Area

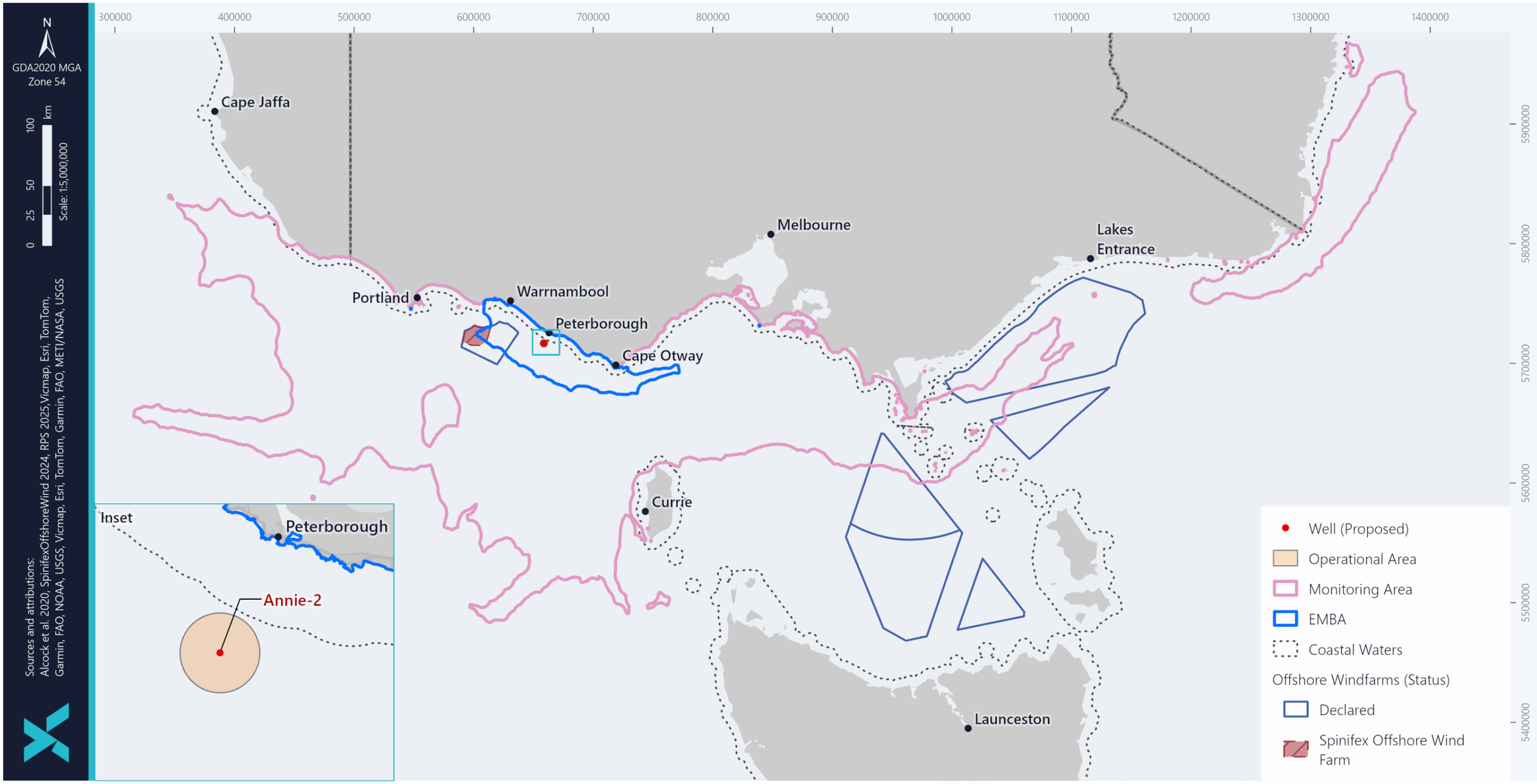


Figure 4-43: Offshore Declared Windfarms Within the Monitoring Area

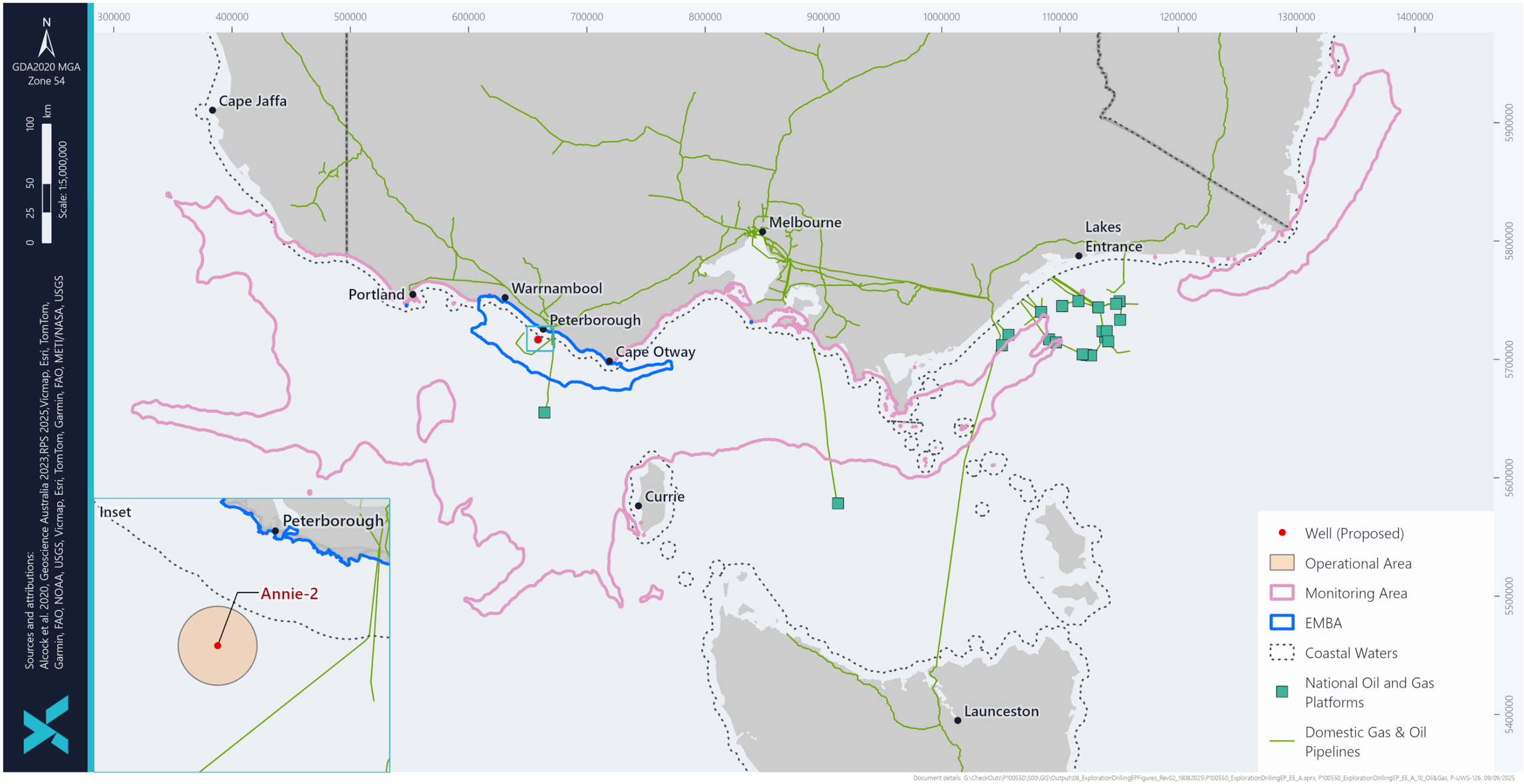


Figure 4-44: Domestic Gas and Oil Pipelines Within the Monitoring Area

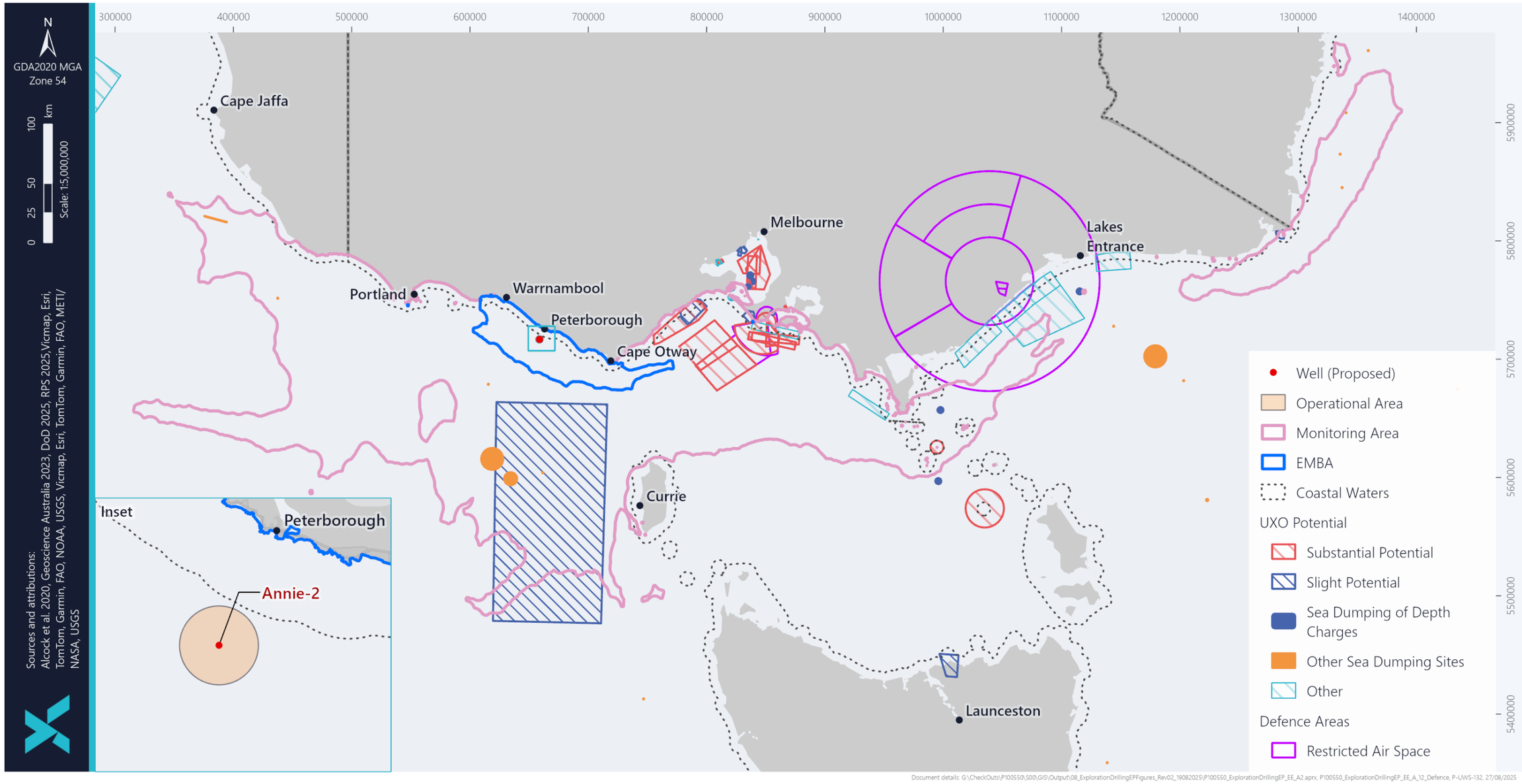


Figure 4-45: UXO Potential and Defence Areas Within the Monitoring Area

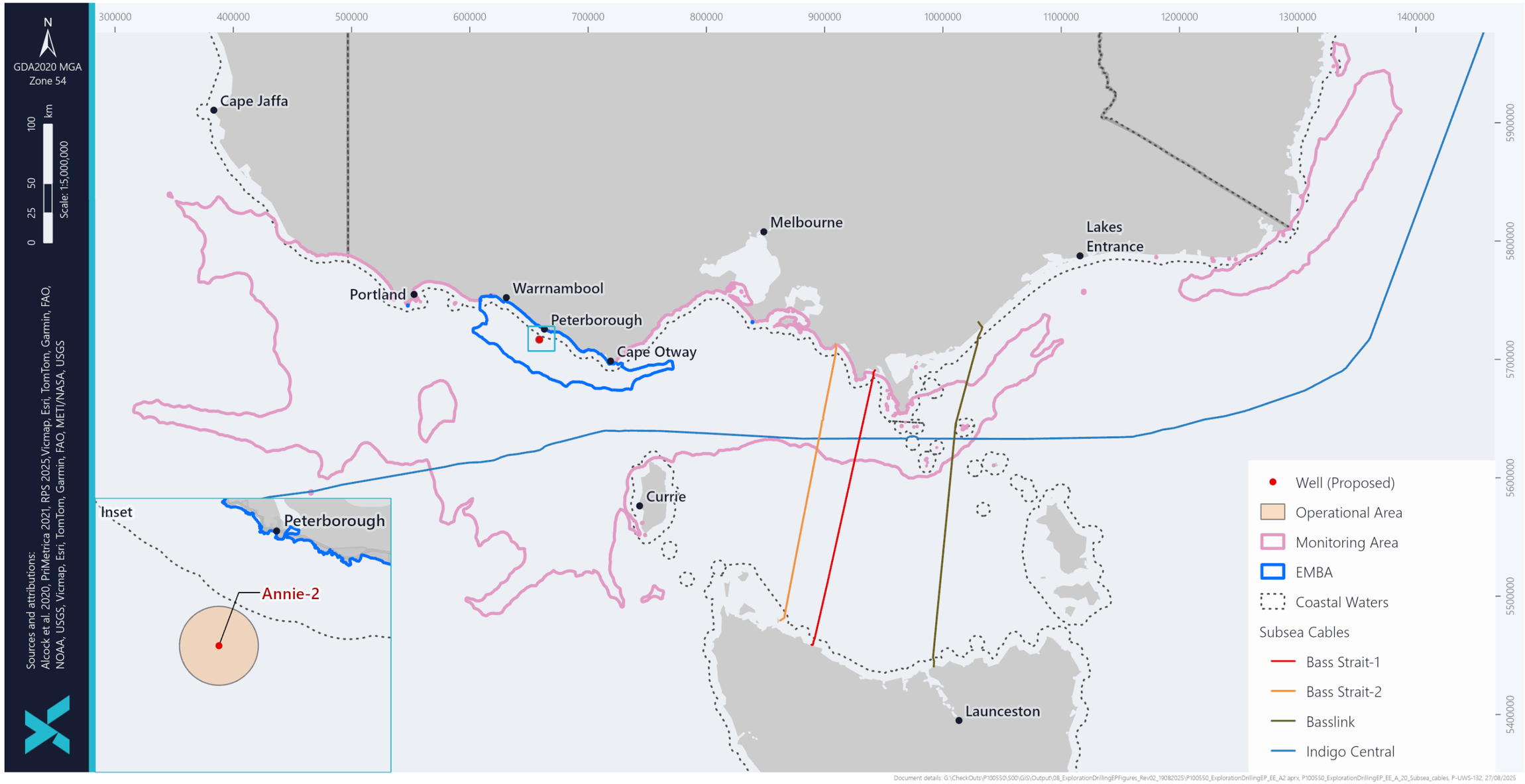


Figure 4-46: Subsea Cables Within the Monitoring Area

4.4.4 Cultural Receptors

The cultural features of the environment may include cultural heritage sites, and values relating to First Nations people's traditional culture and customs (NOPSEMA 2024). Guidance from the documents in Table 4-5 were used to identify tangible and intangible cultural features of the environment relating to First Nations people's heritage sites and values, as well as consultation with First Nations peoples, participation in cultural experiences and training led by Gunditjmara Guide on Gunditjmara Country.

Table 4-5: Guidance Documents used to Identify Cultural Features of the Environment Relating to First Nations People's Heritage Sites and Values

Guidance Document	Document Type	Relevance to the Otway Offshore Operations
Gunditjmara Nyamat Mirring Plan 2023 – 2033 (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023)	Gunditjmara Sea Country Plan	The Gunditjmara Sea Country Plan outlines concerns, and the changes needed to be made for Gunditjmara to fulfil responsibilities to Country. The Plan includes a framework that describes goals and priority actions to achieve those goals that were used to help define First Nations people's heritage sites and values, impacts, and demonstrate acceptability in this EP.
Eastern Maar Meerreengeeye Ngakeeppoorryeeyt (Eastern Maar Aboriginal Corporation 2014)	Eastern Maar Country Plan	The Eastern Maar Country Plan includes details on cultural knowledge, values and perspectives, and ideas and priorities. The Plan defines the Eastern Maar vision for the future with identified goals and objectives that were used to help define First Nations people's heritage sites and values, impacts, and demonstrate acceptability in this EP.
Paleert Tjaara Dja Let's make Country good together 2020 – 2030 – Wadawurrung Country Plan (Wadawurrung Traditional Owners Aboriginal Corporation 2020)	Wadawurrung Country Plan	The Wadawurrung Country Plan consolidates information gathering from many Wadawurrung people including stories about Country. The Plan articulates how Wadawurrung Sea Country is cared for and managed over the next 10 years including listing values and threats to Wadawurrung values that were used to help define First Nations people's heritage sites and values, and impacts in this EP.
Gunaikurnai Whole-of-Country Plan (Gunaikurnai Land and Waters Aboriginal Corporation 2015)	Gunaikurnai Whole-of-Country Plan	The Gunaikurnai Whole-of-Country Plan provides a description of heritage, Country and threats to Country. The Plan provides a strategic framework that contains principles, strategic goals, and success measures that were used to help define First Nations people's heritage sites and values, impacts, and demonstrate acceptability in this EP.
Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) Code of Ethics for Aboriginal and Torres Strait Islander Research (AIATSIS 2020)	Methodology guide	This AIATSIS code applies to all First Nations people research including planning, collection, analysis and dissemination of information or knowledge which is about or may affect First Nations people collectively or individually. This AIATSIS code applies to all First Nations people research including planning, collection, analysis and

Guidance Document	Document Type	Relevance to the Otway Offshore Operations
		dissemination of information or knowledge which is about or may affect First Nations people collectively or individually. This EP will contain research that concerns First Nations people in the following ways: • Research about First Nations people societies, culture and/or knowledge, and policies. • Impact assessment targeted on populations of First Nations people. • Through consultation, First Nations people have contributed to research. • New or pre-existing data relating to First Nations people is used in the description of environment and impact assessment. • Impact assessment concerns First Nations peoples' lands or waters.
Australian Government Style Manual (CoA 2023)	Terminology and style guide	The Australian Government Style Manual was used to help define culturally appropriate and respectful language when writing about First Nations people. To assist in writing about potential impacts to diverse First Nations people groups, the Style Manual was used to help define respectful naming protocols, including defining the identified relevant First Nations people's heritage sites and values. For example, the term 'Dreaming' is complex and within some First Nations people groups have varied meanings, as a result, this EP refers to 'Dreaming sites' and 'connection to Country' to define dreaming stories, ceremony, song and dance and receptors which connect to traditional activities which may be connected to the term 'Dreaming'.
The Burra Charter	Terminology guide	The Burra Charter outlines the steps in planning for and managing a place of cultural significance. The Burra Charter also defines objects and places of cultural significance relevant to First Nations people's heritage sites and values.

Published Country Plans from RAPs within the monitoring area describe the intrinsic links between cultural features of the environment and First Nations people's heritage sites and values (refer Table 5-5 in Appendix 4 -).

4.4.4.1 Native Title

There are 4 native Title Claims that overlap the Monitoring Area (Figure 4-47):

- VCD2007/001 Gunditjmara - Part A
- VCD2010/001 Gunai/Kurnai People
- VCD2011/001 Gunditjmara & Eastern Maar

- VCD2024/001 Eastern Maar People (No 2)

4.4.4.2 First Nations Cultural Features of the Environment

Table 4-6 lists the identified cultural features of the environment relating to First Nations people's heritage sites and values within the operational area and the monitoring area. The cultural ties and intrinsic link between the identified cultural features and First Nations people's heritage sites and values is also described and is informed by sources mentioned above.

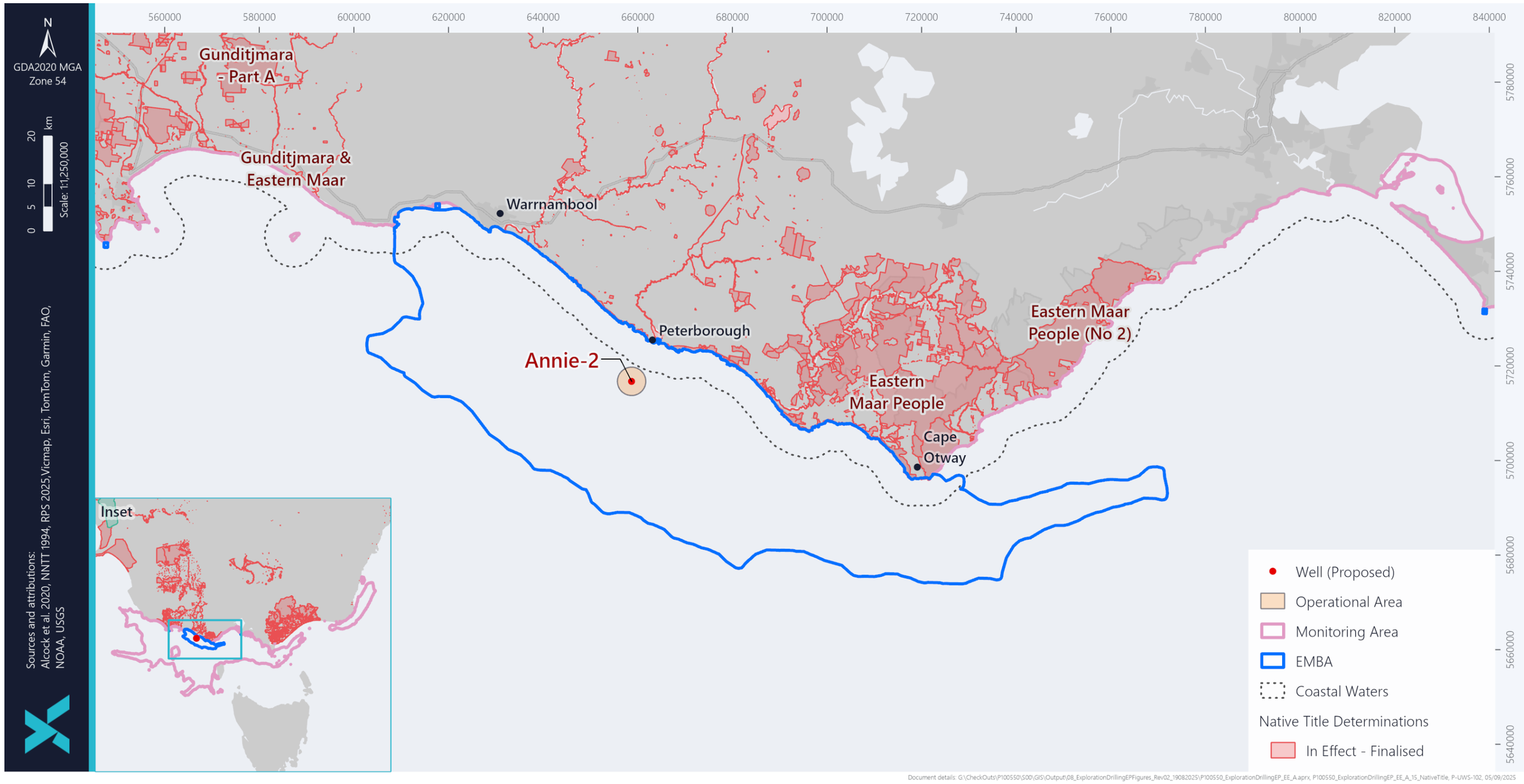


Figure 4-47: Native Title Determinations Within the Monitoring Area

Table 4-6: Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values proximal to Amplitude Energy Offshore Title Areas

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
Tangible Cultural Heritage (e.g. places, objects)						
Gunditj Mirring	Gunditjmara	Coastal/ island places and objects	Victoria-wide A search of the Victorian Aboriginal Heritage Register undertaken by Biosis identified 5,636 recorded Aboriginal places across the entire Victorian coastline (Biosis 2023). The dominant Aboriginal places located in the study area are shell middens (46.82%), artefact scatters (39.21%) and low-density artefact distribution (LDADs) (5.70%). Shell middens, artefact scatters and LDADs are considered cultural heritage objects for the purposes of this EP. Review of relevant Country Plans found 5 coastal/island places within Victoria that are considered significant locations: • The Convincing Ground • Deen Maar • Discovery Bay Coastal Park • Wilsons Promontory • Tyrendarra lava flow. **Deen Maar** Deen Maar includes Deen Maar IPA on mainland Victora, near the town of Yambuk, and Deen Maar Island (Julia Percy Island), approximately 10km off the coast of Yambuk. Deen Maar is Central to the creation of Country and has been important in burial rituals for First Nations Peoples (see below	1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 14	-	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
			'sacred sites' which Discusses the Intangible values of Deen Maar). Dean Maar Island was formed by volcanic eruptions millions of years ago. The island comprises a grassy plateau above steep rocky shores that are exposed to the ocean. Access to Deen Maar Island requires a permit. A rabbit eradication program is currently planned for the island in a collaboration between Victoria State government, EMAC and GMTOAC (Parks Victoria 2023). There is a large fur seal colony which inhabits the rocky shore, which are identified as a culturally significant species, and little penguins, that access the island via the exposed rocky shore. The land above the shore around Yambuk on the mainland includes natural surface (rainwater collecting) wells used by First Nations Peoples, property run by first nations peoples, and wind turbines which have been developed around existing cultural features (ACMI 2010). **Tyrendarra lava flow** The Tyrendarra lava flow is related to both the tangible and intangible, in that it is both a physical thing that was and still is used by Gunditjmara, and it is linked to stories of creation. Within the GMTOAC` Sea Country Plan, and during consultation, GMTOAC shared stories of the creation of the Tyrendarra lava flow which is associated with the World Heritage listed Budge Bim aquaculture system (GMTOAC 2023). This lava flow begins at Mt Eccles and extends across coastal plains and offshore 5-10 km			

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
			to the east of Portland at Julia Reef (Builth, 2004). Recent lava flows like Tyrendarra (circa 30,000 y) are linked to stories of creation, and these landforms have been engineered by Gunditjmara for thousands of years into aquaculture systems, enabling the collection, fattening up, harvest and trade of Kooyong (short-finned eel), a culturally significant species (described further below).			
Gunditj Mirring	Gunditjmara	Submerged sites	Review of relevant Country Plans identified potential submerged sites significant to First Nations people including the ancient Land Bridge (Figure 4-48), submerged landscapes (lava flows), and underwater cultural heritage sites. Sea Country is considered to extend beyond the formally defined RAP area to include sea and submerged lands to the edge of the continental shelf which may include submerged landscapes, and extensions to landscape features such as the Tyrendarra lava flow which extends offshore; these young (circa 30,000) lava flows are connected to stories of creation. The potential for lava flows within Cooper Energy's operated offshore Otway acreage was investigated by evaluating high-quality 3D seismic imagery (Cooper Energy internal review, May 2024). The review found no geological evidence of volcanic or hydrothermal flow events within the sedimentary record of the past 500,000 years within Cooper Energy's operated offshore Otway acreage. As a result, the presence of young lava flows within the operational area is not expected.	1, 2, 3, 4, 5, 6, 9, 10	✓	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
			The Gunaikurnai community have identified that 10,000 years ago, Victoria was connected to Tasmania by a land bridge. At this time, the marine parks and reserves around Wilsons Promontory were terrestrial habitats, inhabited by Gunaikurnai ancestors. It is estimated that rising sea levels at the end of the Ice Age (~14,000 years ago) flooded most of the Bassian Land Bridge, leaving the shallowest crossing readily passable on foot in an area east of Wilsons Promontory in Victoria and north of Hogan Island (located outside of the Otway Basin, in the Bass Strait). Based on bathymetric and topographic data of the land and seafloor of the Bass Strait, ~12,000 years ago, the Bassian Land Bridge was estimated to be completely submerged. The original surface of the Land Bridge is likely to have been eroded and removed, with any remaining artefacts likely buried beneath sediment deep below the ocean. Rising sea levels following the last glacial maximum and the known sea states of the Otway Coast (water depths and velocities) would make preservation of any "recently" buried anthropogenic structures or sites highly unlikely.			
Intangible Cultural Heritage (e.g. meanings, associations, connections)						
Gunditj Mirring	Gunditjmara	Sea Country	RAPs have defined area boundaries which extend to coastal waters. However, Sea Country is considered to extend beyond the formally defined RAP area to include sea and submerged lands to the edge of the continental shelf (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023; Eastern Maar Aboriginal Corporation 2014; Gunaikurnai Land and Waters Aboriginal Corporation 2015).	1, 2, 3, 4, 5, 6, 7, 11, 12, 15	✓	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
			Sea Country is an intrinsic value to First Nations people. It includes parts of open ocean, beaches, land and freshwater on the coast, habitats and encompasses all living things, beliefs, values, creation spirits and cultural obligations connected to an area.			
Gunditj Mirring	Gunditjmara	Creation/ Dreaming sites, songlines, sacred sites and Ancestral beings	Stories and songlines link First Nations people to ancestors, culture, and Country. Dreaming stories further reinforce the memories and songlines relating to the flooding of Country, and significant connection to Sea Country. Dreaming songlines link tribal kings such as Umbarra or King Merriman to Wallaga Lake, and Borun the pelican who created songlines and storylines as he walked through Gunaikurnai Country. Gunaikurnai creation story, of Borun (the pelican) and Tuk (the musk duck), explains the connection to Country. For Gunditjmara, sites important for Dreaming include Deen Maar where Ancestors leave the earth. Deen Maar Island is believed to be the place where Punjil the creator, left this world (Framlington Aboriginal Trust and Winda Mara Aboriginal Corporation (2004), ACMI (2010). Clark (2007) describes the story of a cave on the mainland, opposite Dean Maar Island, and of a passage between the two. The Cave and Deen Maar are both spiritually and visually connected. Grass found at the mouth of the cave provided proof that a good spirit had transferred the body of a recently buried person through the cave to Deen Maar	1, 2, 3, 4, 5, 6, 12, 15	✓	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
			Island and conveyed their spirit to the clouds. See Coastal / Island / Places for a physical description of Deen Maar Island.			
Gunditj Mirring	Gunditjmara	Cultural obligations to care for Country Knowledge Systems Connection to Country	First Nations people may maintain strong spiritual ties to Country. Spiritual connection to Country includes how Country provides spiritual life-giving resources for species and landscapes, places where the spirits of Ancestors rest (Deen Maar) or where spirits reside including water bodies; where peace, direction and purpose originates. If First Nations peoples cannot access areas of Sea Country that they typically do access, this may affect Traditional Owners connection to Country. In the case of Deen Maar, access could be visual access or physical access. First Nations People may be culturally obligated and inherently responsible to care, protect and heal Country for present and future generations. The roles held relating to taking care of Country and knowledge holding may vary amongst individuals and within clans and family groups. Roles may include taking care of culturally significant species or habitats of significant species known to be important food resources, and culturally significant landscapes and places. First Nations peoples ecological, spiritual, traditional and cultural knowledge may be passed through the generations using cultural practices (dreaming stories, ceremony, song and dance) where knowledge holders (Elders) are the custodians of knowledge. This knowledge may include culturally significant species, and landscape features that hold dreaming and creation stories or are events and ceremonial places critical for intergenerational	1, 2, 3, 4, 5, 6, 11 12, 13, 14	✓	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
			knowledge sharing and cultural practice. Knowledge holders have responsibility for traditions, observances, customs or beliefs associated with specific areas.			
Habitats and species						
Gunditj Mirring	Gunditjmara	Culturally significant species/ food resources: Fish, sharks, rays, eels, shellfish and crustaceans - collection from coastal and riverine environments.	Fish, sharks, eels, crayfish, yabbies mussels, oyster and rays may be a valued source of food and hold significance for First Nations people. GMTOAC have highlighted short-finned eels (Kooyang) as of particular significance to Gunditjmara people, who developed complex aquaculture systems to trap and store eels. The aquaculture systems were engineered from the volcanic formations associated with the Tyrendarra Lava flow to create Budj Bim. The eels which are a valued source of food, were captured, fattened up, harvested, smoked and traded, and continue to hold cultural significance for Gunditjmara. Today there are cultural tours at Budj Bim, run by Gunditjmara peoples. The short-finned eel species migrates through State waters and Commonwealth Marine Area of the Otway Region between freshwater systems in Victoria including within Gunditjmara Country, to / from spawning grounds in the Coral Sea, thousands of km to the north. Based on the observed migratory route of short-finned eels, short-finned eels in adult and glass eel forms may pass the operational area during seasonal migrations. During late summer and autumn adult eels will enter the Otway Basin and Bass Strait	1, 2, 3, 5, 4, 6, 11, 12, 13	✓	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
			to commence their migration to the Coral Sea. During mid-winter to late spring, the short-finned eel in larvae and glass eel forms will enter Victorian estuaries to complete the upstream migration. Upon entering the marine environment, eels disperse widely. Individuals' migratory paths are known to diverge widely, and timing of arrival in the Coral Sea is also variable.			
Gunditj Mirring Wadawurrung Eastern Maar	Gunditjmara Wadawurrung Eastern Maar Peoples	Culturally significant species: Cetaceans	First Nations people around Australia may have a strong connection to whales, which has significance as totemic ancestors to some groups. Karntubul (whales) in Sea Country hold deep cultural significance to the Gunditjmara and feature in Dreaming stories, ceremony, song and dance traditions. Whale migration occurs through the operational area and monitoring area. Whale migration is associated with the belief that whales are ancestors of some First Nations peoples and arrive to the coast, annually. Key whale species which may relate to a practice of 'calling in' the whales back to the coast are the southern right whale, which reproduce close to shore, and are often observable from shore, though other whales can also be observed from shore, including humpback whales. Whale beaching events may be of significance to First Nations people, as parts of deceased whales were, and can still be used as a resource. Multiple whale species have the potential to beach in the region, including, though not limited to the southern right whale, pygmy blue whale, and humpback whale.	1, 2, 3, 8, 12, 15	✓	✓

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
Wadawurrung	Wadawurrung	Culturally significant species: Pinnipeds	Koorn Moorn (seals) are culturally significant for Gunditjmara people. They feature in song and dance and were collected as a food resource in traditional times by Gunditjmara women along the coast. The Australian sea-lion, southern elephant seal, New-Zealand fur seal, and Australian fur seal are known to occur within the monitoring area, including a large colony of Fur Seals at Deen Maar Island that haul out on the island's rocky shores.	1, 2, 4, 15	✓	✓
Gunaikurnai	Gunaikurnai					
Gunditj Mirring	Gunditjmara	Culturally significant species: Seabirds	Different avian species hold deep connections to lore and represent spiritual emblems or totems. Magpie gees and Cape Barren geese were harvested for food from wetland habitats. Wetland habitat loss has reduced numbers of these species and harvesting not permitted in Victoria.	1, 2, 3, 4, 5, 6, 8	✓	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					
Gunditj Mirring	Gunditjmara	Culturally significant species: Plankton	The Bonney upwelling system is valued by Gunditjmara for the cold waters and nutrients it brings to the region, which supports plankton growth, providing a food source for culturally significant species (GMTOAC 2023). The Bonney upwelling is a large-scale oceanographic system and key ecological feature that influences the Otway coast (Appendix 4 -) the feature is active in Autumn and Summer depending on the strength and frequency of alongshore winds (Bulter et al. 2002). The area is significant as one of the largest and most predictable upwellings in south-eastern Australia, and most	1	✓	✓

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
			prominent upwelling system driven by prevailing south-easterly winds			
Gunditj Mirring	Gunditjmara	Water quality	Water including marine and freshwater systems, may be 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. First Nations communities in Victoria may maintain strong connections to water and culture. Increased pollution from coastal communities, agriculture and industry, may affect water quality, impact marine species and therefore harms Country.	1, 2, 3, 4, 5, 6	✓	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					
Gunditj Mirring	Gunditjmara	Benthic habitats	Nearshore reefs provide habitat for many culturally significant species such as macroalgal communities, fish, sharks and rays. Julia Reef is within sea country adjacent to Gunditj Mirring RAP and is an extension of the volcanic feature connected to Budj Bim. Julia Reef marks the seaward extent of the Tyrendarra lava flow, ending approximately 15 km offshore and 10-15km east of Portland (Builth, 2004). Julia Reef is a preferred fishing spot for recreational fishers (VFA 2022a).	1	-	✓
Gunditj Mirring	Gunditjmara	Intertidal communities and shorelines	Intertidal communities and shorelines include mangroves, macroalgae, seagrass, coastal saltmarsh, rocky and sandy shorelines. Intertidal reefs and sandy shorelines are important cultural heritage sites and are important for marine fauna and culturally significant marine life such as seabirds and migratory shorebirds, fish, sharks, rays, eels, and pinnipeds.	1, 2, 3, 4, 5, 6	-	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
			Sea Country for Wadawurrung people includes coastal habitats such as seagrass and saltmarsh.			
Gunditj Mirring	Gunditjmara	Marine Park/ coastal reserves / wetlands	The First Nations people residing within the monitoring area may have strong cultural associations with Sea Country and may have cultural responsibilities for the waters and Marine Parks and Reserves that are located within Country. Some First Nations groups including the Gunaikurnai people have joint management over the Marine Parks and reserves within Country. Marine parks and reserves around Wilsons Promontory and Ninety Mile Beach National Park were inhabited Gunaikurnai ancestors. Marengo Reef Marine Park holds cultural significance for the Eastern Maar people. The marine park includes rocky features with high structural diversity, and provides for numerous filter-feeding organisms, such as tube worms and barnacles, and are surrounded by bull kelp. Islands within the park are known as a haul out site for fur seals. Wadawurrung Country covers the Avalon Coastal reserve.	1, 2, 3, 4, 5, 6, 11, 12	-	✓
Wadawurrung	Wadawurrung					
Eastern Maar	Eastern Maar Peoples					
Gunaikurnai	Gunaikurnai					
Bunurong	Bunurong					

Sources:

1. Gunditj Mirring Traditional Owners Aboriginal Corporation 2023
2. Wadawurrung Traditional Owners Aboriginal Corporation 2020
3. Eastern Maar Aboriginal Corporation 2014
4. Gunaikurnai Land and Waters Aboriginal Corporation 2015
5. Biosis 2023
8. Parks Victoria 2019
9. Adeleye et al. 2021
10. Hamacher et al. 2023
11. Smyth, Egan, & Kennett 2018.
12. Nunn and Reid 2016
13. DoE 2015b

First Nations Group	Representing	Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Sources	Potential for overlap of Operational Area	Potential for overlap of Monitoring Area
6. Bunurong Land Council Aboriginal Corporation 2024 7. The University of Adelaide 2023.				14. Victorian Aboriginal Heritage Council 2021 15. Director of National Parks 2025.		

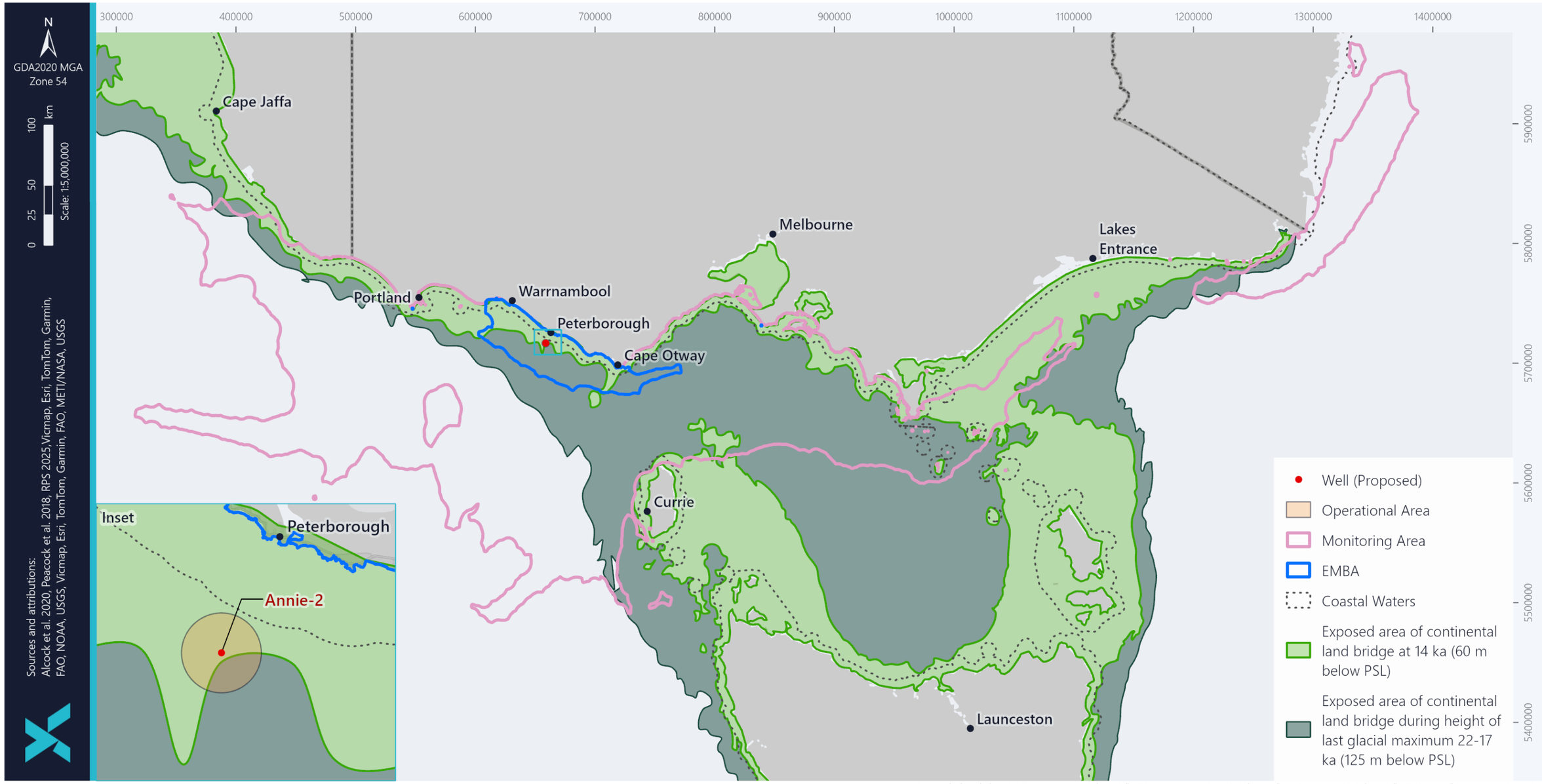


Figure 4-48: Exposed Area of Continental Bassian Land Bridge Within the Monitoring Area

4.4.5 Seasonality of Key Sensitivities

Table 4-7: Seasonality of Key Sensitivities within the Otway Basin

Environmental Sensitivity	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Marine Mammals												
Antarctic minke whale			Likely to occur in the austral summer									
Australian sea lion	Assumed present year-round – South-east marine region (SEMR) is a known range											
Australian fur seal (Koorn Moorn)	Present year-round – Islands of the Bass Strait are known colonies Breeding occurs during summer months (October-December)											
Pygmy blue whale		Foraging occurs during Bonney Upwelling – BIA										
Bryde's whale	Prefers water depths ranging from 200 m – 1000 m											
Dusky dolphin	Assumed present year-round – prefers inshore habitats but may also be pelagic at times											
Fin whale	Present during the Bonney Upwelling events											
Humpback whale				Nth Migration through SEMR						Sth Migration through SEMR		
Killer whale	Assumed present year-round – frequent sightings off Vic along the continental slope and shelf											
Pygmy right whale	Uncommon / few or no records available for Vic.											
Sei whale	Sighted during the Bonney Upwelling event											
Southern right whale – migration				Species is regularly present on the Australian coast between early-April to early November								

Environmental Sensitivity	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Southern right whale – reproduction							Peak reproductive behaviours mid-July through to August					
Sperm Whale	Prefer deep offshore environments >600 m											
Marine Reptiles												
Green turtle	Occurs in limited numbers in Vic and SA											
Leatherback turtle	Foraging in the SEMR is known to occur											
Loggerhead turtle	Uncommon in southern Australia											
Fish, Sharks and Rays												
Kooyang (Short finned eel)		Adult eels begin seasonal migration to the Coral Sea.					Larvae and glass eel forms enter Victorian estuaries to complete upstream migration.					
Australian grayling		Spawning from late Summer to Winter (freshwater)				Assumed present year-round – typically occurs in freshwater but can occur in coastal seas						
White shark	Assumed present year-round with distribution and foraging BIAs identified throughout the region											
Blue warehou	Assumed present year-round											
Eastern school shark	Assumed present year-round											
Orange roughy	Assumed present year-round											
Avifauna												
Antipodean albatross	Foraging known to occur all year											
Australasian gannet						Present year-round – foraging and aggregation BIAs				Breeding occurs Oct – May		

Environmental Sensitivity	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Black-browed albatross				Fledglings (Apr – May)		Present – foraging BIA			Breeding within SEMR on Macquarie Is.			
Black-faced cormorant	Assumed present year-round (endemic to southern Australia)											
Buller's albatross	Foraging BIA – however, records indicate the species is mainly present around Tas when in the SEMR (species endemic to NZ)											
Campbell albatross					Present in the non-breeding season – foraging BIA			Breeds on Campbell Island, south of NZ Aug - May				
Common diving petrel		Present year-round – foraging BIA					Breeding occurs Jul-Jan – breeding BIA					
Indian yellow-nosed albatross			Fledgling Mar-Apr			Non-breeding visitor – foraging BIA			Breeding occurs in South Africa – eggs laid in Sep-Oct			
Little penguin			Present year-round – foraging BIA						Breeding Sept – Feb			
Short-tailed shearwater (mutton bird)	Present Sep-May – foraging BIA					Migrates north for Winter				Breeding Oct – May		
Shy albatross	Assumed present year-round – foraging BIA. Breeding occurs in SEMR with eggs laid in Sept and fledglings in Apr											
Wandering albatross	Assumed present year-round – foraging BIA. Breeding occurs biennially on Macquarie Island with eggs laid in Dec and fledglings between mid-Nov and late-Feb											
Wedge-tailed shearwater	Present Aug-May – foraging and breeding BIA											
White-faced storm petrel	Fledglings mid-Feb – mid-Mar Foraging BIA during breeding season			Migrates to tropical and subtropical locations in non-breeding season					Species arrive at breeding colonies late-Sept – early-Oct with egg laying occurring in early Summer. Foraging BIA during breeding season			
Avifauna – other seabirds (With no BIAs identified)	Various species – assumed present											
Avifauna – shorebirds	Various species – assumed present											
Legend												

Environmental Sensitivity	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Peak occurrence / activity (reliable and predictable)											
	Low level of occurrence/ activity (may vary from year to year), or otherwise as described above											
	No occurrence											

5.0 Impact and Risk Assessment

The regulations require an EP details the environmental impacts and risks associated with the activity, that the EP comprises an evaluation of all the impacts and risks, appropriate to the nature and scale of each impact or risk, and that those impacts, and risks be reduced to ALARP and are of an acceptable level,

This EP provides the environmental impact and risk evaluation for the Activity activities by adopting the Amplitude Energy Risk Management Protocol (CMS-RM-PRO-0001) and Risk Matrix and Assessment Criteria (CMS-RM-RAS-0001). This Protocol is consistent with the approach outlined in ISO 31000:2018 Risk Management - Guidelines).

Figure 5-1 provides the six-step process adopted for the evaluation of impacts and risks associated with the activity and is integral to the Amplitude Energy risk assessment methodology.

Figure 5-1: CEMS Risk Management Protocol (six-step process)

Further details of the environmental impact and risk assessment methodology are provided in the following sections, including assessment criteria and risk ratings.

A Risk Register is 'the managed repository of key risk information maintained by each Business Area'. It is a living part of risk management that is continually reviewed and updated. In accordance with the Amplitude Energy Management System (CEMS) Risk Management Protocol, each Business Area must maintain a Risk Register and conduct risk management as an integral activity within all business processes to help manage uncertainty in achieving objectives and to aid in decision making. Section 6.0 expands on the Activity Risk Register, showing all identified risks, impacts, preventative and mitigative controls.

5.1 Definitions

In this section, Amplitude Energy has provided a list of terminology and definitions that will be meet the requirements of Section 21(5) of the OPGGS(E)R:

Activity: An activity refers to a component or task within an Activity which results in one or more environmental aspects.

Aspect: An environmental aspect is an element or characteristic of an activity, product, or service that interacts or can interact with the environment. Environmental aspects can cause environmental impacts or may create a risk to one or more environmental receptors.

Consequence: The consequence of an impact (or risk event) is the outcome of the event on affected receptors. Consequence can be positive or negative.

Impact: An environmental impact is a change to one or more environmental receptors that is caused either partly or entirely by one or more environmental aspects. An impact is something which is certain to occur. An environmental aspect can have either a direct impact on the environment or contribute only partially or indirectly to a larger environmental change. An environmental aspect may result in a change which puts one or more receptors at risk of being impacted. The relationship between environmental aspects and environmental impacts is one of cause and effect. The term 'impact' is associated with planned activities and known outcomes.

Likelihood: The likelihood (or probability) of the consequence occurring. Likelihood only applies to risk and risk events.

Residual risk: Residual risk is the risk remaining after additional control measures have been applied (i.e. after impact or risk treatment).

Risk: An environmental risk (or risk event) is a change which could occur to one or more environmental receptors, caused either partly or entirely by one or more environmental aspects. A risk event has a degree of likelihood, it is not certain to occur. The term 'risk' is associated with planned and unplanned activities where the change elicited on or by a particular receptor is uncertain.

Risk severity: The risk severity level is determined from the point on the risk matrix where the consequence intersects the likelihood.

5.2 Risk Management Process Steps

This section provides a detailed overview of the risk management process steps.

5.2.1 Step 1: Establish the Context

All components of the petroleum activity relevant to this scope have been identified and described in Section 3.0 of this EP.

After understanding the petroleum activity, an assessment was carried out to identify relevant aspects. The stakeholder consultation outcomes, undertaken over several years, have also contributed to aspect identification. The environmental aspects identified for this petroleum activity are detailed in Section 4.0.

5.2.2 Step 2: Risk Identification

Risk identification involved the documentation of specific risks as they relate to the context established in Step 1 (Section 5.2.1). An environmental risk assessment was undertaken to identify environmental impacts and risks associated with the petroleum activity. The assessment was attended by Activity personnel spanning operations, well engineering, subsea, HSEC disciplines and may be supported by other specialists.

Cumulative impacts associated with the activity and adjacent activities were also considered. NOPSEMA provide a definition of cumulative impacts within the Environment Plan decision making guideline (NOPSEMA 2024) as:

"In the context of offshore petroleum activities, cumulative environmental impacts are successive, additive or synergistic impacts of collectively significant activities or projects with material impacts on the environment that have the potential to accumulate over temporal and spatial scales".

As described in Section 4.4.3, other oil and gas titleholders are currently operating within Commonwealth waters in the Otway Basin, with additional titleholders also proposing upcoming activities. These activities have been identified and assessed in alignment with the NOPSEMA definition above. The NOPSEMA Environment Plan website was used to identify reasonably foreseeable future projects and activities through approved and under assessment published EPs. Each published EP provided an environmental baseline within the Description of the Environment reflecting the effects of previous and current activities and outlines any threats. The existing Otway offshore facilities and associated activities form part of the current baseline given their ongoing presence for a number of years.

5.2.3 Step 3: Risk Analysis

All impacts and risks identified during the assessment were analysed. Impact and risk analysis requires a level of consequence to be assessed for each impact or risk event. For each risk event, the likelihood of occurrence was determined.

Impacts and risks were evaluated using the Amplitude Energy Risk Matrix, which includes:

- A six-level likelihood table to assess the probability of risk occurrence.
- A five-level consequences table to assess the risk impact against business objectives (Table 5-1).
- A matrix of likelihood versus consequence that defines four levels of risk severity and allows a risk to be assessed and plotted.
  - The outcome of the plotted risks is termed a 'Heat Map' and provides a graphic representation of the risks, their respective severities and likelihood.
- A four-level risk severity table that defines the actions and escalation required for risks at different severity levels.

The Amplitude Energy Risk Matrix is provided in Table 5-2.

Table 5-1: Environmental Consequence Assessment Criteria

Consequence Level	Environmental Consequence Description
1	Minor local impacts or disturbances to flora/fauna, nil to negligible remedial/recovery works on land/ water systems.
2	Localised short-term impacts to species or habitats of recognized conservation value not affecting local ecosystem function; remedial/recovery work to land, or water systems over days/weeks.
3	Localised medium-term impacts to species or habitats of recognized conservation value or to local ecosystem function; remedial/recovery work to land/water systems over months/year.
4	Extensive medium to long-term impact on highly valued ecosystems, species populations or habitats; remedial/recovery work to land/ water systems over 1 – 10 years.

Consequence Level	Environmental Consequence Description
5	Severe long-term impact on highly valued ecosystems, species, or habitats. Significant remedial/recovery work to land/water systems over decades.

The Risk Severity can be:

- **Extreme (red):** inherent risk at this level is not within the Company's risk appetite. Activity cannot proceed until the Managing Director approves the treatment plans that eliminates or reduces Health Safety and Environment risks to ALARP and reduce risks in other categories in line with the Company's risk appetite. The Board must be informed of the risk and its treatment.
- **High (orange):** inherent risk at this level requires the respective ELT Member to approve the treatment plans before the activity proceeds. Treatment plans are required to eliminate or reduce Health, Safety and Environment risks to ALARP and reduce risks in other categories in line with the Company's risk appetite. the Managing Director and the Board must be informed of the risk and its treatment.
- **Moderate (yellow):** inherent risks at this level may be acceptable if they are in line with the Company's risk appetite. Except for Health, Safety and Environment risks which must be eliminated or demonstrated as reduced ALARP. Appropriate Managers or Functional Leaders must approve treatment plans and risks should be reported during regular reporting.
- **Low (green):** this level of risk is broadly acceptable; however, Health Safety and Environment risks must be eliminated or demonstrated as reduced ALARP with treatment plans approved by assigned persons. For risks in other categories, as a minimum, a review of existing control measures should occur, and the risk should be regularly monitored for deterioration.

Note: Key descriptor words relating to duration, spatial extent and magnitude from these definitions, are used within the risk management process for consideration of all elements of the environment, including ecological, physical and social receptors. These receptors are identified within the existing environment section and integrated into the risk assessment through activity-aspect interaction scoping.

Table 5-2: Amplitude Energy Qualitative Risk Matrix

Likelihood						Consequence				
Qualitative					Quantitative					
Rating	Level	Probability	Time Period	Description		1	2	3	4	5
A	Almost certain	> 80%	More than once a year	Expected to occur in most circumstances and/or more than once a year, or repeatedly during the activity.	$>10^{-2}$	Moderate	Moderate	High	Extreme	Extreme
B	Likely	> 50%	Every 1 – 2 years	Not certain to happen but an additional factor may result in an occurrence. Expected to occur from time to time during the activity.	$>10^{-2}$	Low	Moderate	Moderate	High	Extreme
C	Possible	> 20%	Every 4 – 5 years	Could happen when additional factors are present. Easy to postulate a scenario for the occurrence but considered doubtful. Expected to occur once during the activity.	$>10^{-3}$	Low	Moderate	Moderate	High	High
D	Unlikely	> 5%	Every 5 – 20 years	A rare combination of factors would be required for an occurrence. Conceivable and could occur at some time. Could occur during the activity.	$>10^{-4}$	Low	Low	Moderate	Moderate	High
E	Remote	< 1%	Every 20 – 100 years	A freak combination of factors would be required for an occurrence. Not expected to occur during the activity. Occur in exceptional circumstances.	$>10^{-5}$	Low	Low	Moderate	Moderate	High
F	Hypothetical	< 1%	Not in 100 years	Generally considered hypothetical or non-credible. Black Swan.	$>10^{-6}$	Low	Low	Low	Low	Moderate

5.2.4 Risk Evaluation

5.2.4.1 Identify and Evaluate Controls

Controls are any measures exercised that modify the impact or risk. Controls that act on an impact cause to reduce the consequence of the impact. Controls that act on a risk cause to reduce the likelihood of the risk occurring and are termed preventative controls. Reactive controls are those that modify the consequence once a risk event has occurred.

For the risk evaluation, all controls identified are captured for each risk.

The risk evaluation assessed each control for its effectiveness in managing the risk causes and consequences. This may be different from the effectiveness of the control to deliver its original designed purpose.

5.2.4.2 Determine ALARP Status

The ALARP status of each impact and risk was assessed based on the sufficiency of the controls already established and the opportunity for new controls to be implemented. A cross-functional team was assembled to ensure the risks and controls were assessed from different perspectives and to identify the possibility of additional controls that can reduce the risk. Where no additional realistic and feasible controls were identified for the risk, it is considered ALARP.

In alignment with NOPSEMA's ALARP guidance note (N-04300-GN0166 A138249, 1/8/2022), Amplitude Energy have adapted the approach developed by Oil and Gas UK (OGUK) (formerly UKOOA) (OGUK, 2014) for use in an environmental context to determine the assessment technique required to demonstrate that potential impacts and risks are ALARP (Figure 5-2).

Specifically, the framework considers impact consequence and several guiding factors:

- activity type
- risk and uncertainty
- stakeholder influence.

A **Type A** decision is made if the risk is relatively well understood, the potential impacts are low, activities are well practised, and there are no conflicts with company values, no partner interests and no significant media interests. However, if good practice is not sufficiently well defined, additional assessment may be required.

A **Type B** decision is made if there is greater uncertainty or complexity around the activity and/or risk, the potential impact is moderate, and there are no conflict with company values, although there may be some partner interest, some persons may object, and it may attract local media attention. In this instance, established good practice is not considered sufficient and further assessment is required to support the decision and ensure the risk is ALARP.

A **Type C** decision typically involves sufficient complexity, high potential impact, uncertainty, or stakeholder influence to require a precautionary approach. In this case, relevant good practice still must be met but additional assessment is required, and the precautionary approach is applied for those controls that only have a marginal cost benefit. In accordance with the regulatory requirement to demonstrate that environmental impacts and risks are ALARP, Amplitude Energy has considered the above decision context in determining the level of assessment required. This is applied to each aspect described in Section 6.0.

The assessment techniques considered include:

- good practice
- engineering risk assessment
- precautionary approach.

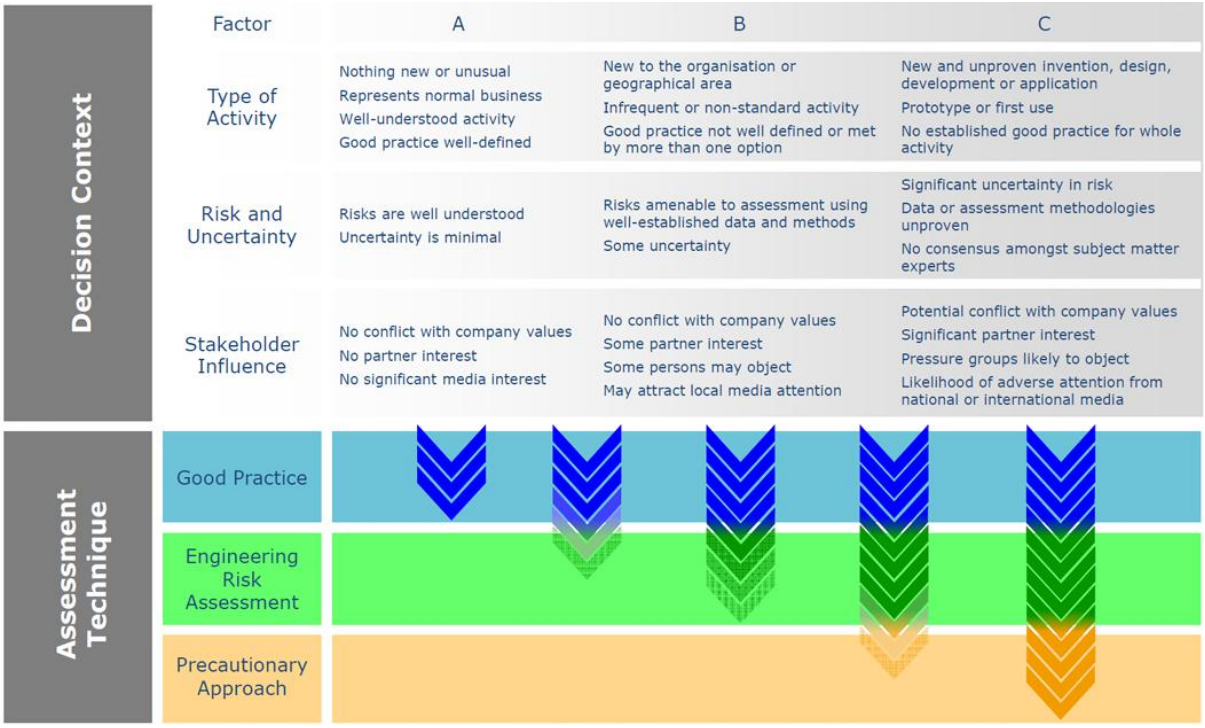


Figure 5-2: Impact and Risk Uncertainty Decision Making Framework

Good Practice

OGUK (2014) defines 'Good Practice' as the recognised risk management practices and measures that are used by competent organisations to manage well-understood hazards arising from their activities.

For this EP, sources of good practice include:

- requirements from Australian legislation and regulations
- relevant Australian policies
- relevant Australian Government guidance
- relevant industry standards
- relevant international conventions
- industry learnings and associated continuous improvement.

If the ALARP technique determines the controls to be 'Good Practice', further assessment ('Engineering Risk Assessment') is not required to identify additional controls. However, additional controls that provide a suitable environmental benefit for an insignificant cost may be identified.

Engineering Risk Assessment

All potential impacts and risks that required further assessment were subject to an 'Engineering Risk Assessment'.

Based on the various approaches recommended in OGUK (2014), Amplitude Energy considers the methodology most suited to this Activity is a comparative assessment of risks, costs, and environmental benefit. A cost–benefit analysis should show the balance between the risk benefit (or environmental benefit) and the cost of implementing the identified measure, with differentiation required such that the benefit of the risk reduction measure can be seen and the reason for the benefit understood.

Precautionary Approach

OGUK (2014) state that if the assessment, considering all available engineering and scientific evidence, is insufficient, inconclusive, or uncertain, then a precautionary approach to hazard management is needed. A precautionary approach will mean that uncertain analysis is replaced by conservative assumptions that will result in control measures being more likely to be implemented. That is, environmental considerations are expected to take precedence over economic considerations, meaning that a control measure that may reduce environmental impact is more likely to be implemented. In this decision context, the decision could have significant economic consequences to an organisation.

5.2.4.3 Evaluate the Acceptability of the Potential Impacts and Risks

The acceptability of the Activity has been demonstrated in the **OPP** as part of the ECSP, in accordance with Regulation 13 of the OPGGS(E)R. The EPOs defined in the OPP for the East Coast Supply Project provides a mechanism to demonstrate potential impacts and risks will be managed to the defined acceptable levels.

In this EP, Amplitude Energy demonstrates the defined acceptable levels in the OPP have been met by providing an acceptability evaluation against the acceptability factors listed in Table 5-3 and the following criteria:

- Using relevant OPP EPOs and control measures or their equivalents (Appendix 1 -)
- Using EP specific control measures (Section 5.2.4.1 and 5.2.4.2)
- Impact and risk rankings in the EP are equal to or less than those defined in the OPP, for the EPOs to be met
- Evaluation of internal and external context to this EP.

Table 5-3: Amplitude Energy Acceptability Evaluation

Factor	Criteria / Test
Amplitude Energy Risk Management Protocol	Is the risk severity extreme (i.e., not within the Company's risk appetite), or High (i.e., requires involvement from the Managing Director to approve the treatment plan)?
Principles of Ecologically Sustainable Development (ESD)	Is there the potential to affect biological diversity and ecological integrity? (Consequence Level 4 and 5). Do activities have the potential to result in serious or irreversible environmental damage? If yes: is there significant scientific uncertainty associated with aspect? If yes: has the precautionary principle been applied to the aspect?
Legislative and Other Requirements	Are there any good practice control measures which have not been adopted, including those identified in relevant EPBC listed species recovery

Factor	Criteria / Test
	plans or approved conservation advice? If not adopted, have alternate control measures been adopted that provide equal or better levels of protection?
Internal Context	Is the impact or risk provided for within CEMS Standards and Processes? If no, what additional provisions will be made?
External Content	Are there any objections and claims regarding this aspect which have not been resolved? If yes, is there anything which precludes reaching a resolution?

5.2.4.4 Principles of ESD and Precautionary Principle

The principles of ESD are considered in Table 5-4 in relation to acceptability evaluations.

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

Table 5-4: Principles of Ecologically Sustainable Development (ESD)

ESD	Principle	Relevance to Acceptability
A	Decision making processes should effectively integrate both long term and short term economic, environmental, social, and equitable considerations	The Activity is part of the ECSP; therefore, this principle is inherently met through the OPP assessment process. Specifically, through the integration of consultation feedback in the development of defined acceptable levels, impact and risk evaluations and demonstrations of acceptability. Therefore, this principal is not considered separately for each acceptability evaluation in this EP.
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.	An evaluation is completed to determine if the activity will result in serious or irreversible environmental damage. Where the activity has the potential to result in serious or irreversible environmental damage, an assessment is completed to determine if there is significant uncertainty in the evaluation.
C	The principle of inter-generational equity—that the present generation should ensure that the health, diversity, and productivity of the environment is maintained or enhanced for the benefit of future generations.	Where the potential impacts and risk are determined to be serious or irreversible the precautionary principle is implemented to ensure the environment is maintained for the benefit of future generations.
D	The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making.	An assessment is completed to determine if there is the potential to impact biological diversity and ecological integrity.
E	Improved valuation, pricing and incentive mechanisms should be promoted.	This principle is met through identifying the economic, social and ecological value of the existing environment (Section 4.0), and including provisions for Amplitude Energy to bear the full cost of environmental management for the life of the project to ensure environmental impacts and risks are reduced to an acceptable levels. This is reflected in all impact and risk

ESD	Principle	Relevance to Acceptability
		acceptability demonstrations and environmental performance evaluations. Amplitude Energy incorporates market-based mechanisms such as carbon pricing (Section 6.4) where applicable, sets adaptive management frameworks (such as the whale disturbance protocol Section 6.6.5) and is required to hold financial assurance under Section 571(2) of the *OPGGS Act* to ensure the project aligns with the 'polluter pays' principle.

5.2.5 Risk Monitoring, Review and Record

Risks, risk treatments and controls require continual monitoring and review to determine whether assumptions and decisions remain valid. The risk environment and risk continually change, and treatment plans can also alter the risk. Relevant persons (which may be internal and external to the company) need to be consulted and kept informed.

The monitoring, review and recording activities provide assurance that:

- Emerging risks are identified, and existing risks remain relevant and managed.
- Controls continue to be effective and efficient in design and operation.
- Controls required for the risk to be ALARP are effectively implemented and operating as expected.
- Risk management objectives remain appropriate and are supported by effective treatment activities.
- The process for managing risk is operating effectively and efficiently.
- Information on risk changes and treatment activities are documented.

Relevant persons are consulted and where relevant are informed regularly of the risk management progress and performance.

Additional aspects of monitoring and review are described in the Implementation Strategy in Section 11.0 of this EP and include:

- Analysing lessons learnt from events (including near misses), changes, trends, successes and failures.
- Detecting changes in the external and internal context (e.g. new conservation plans issued).
- Chemical selection and discharge process.

6.0 Risk and Impact Evaluation

To meet the requirements of the regulations (evaluation of environmental impacts and risks, environmental performance outcomes and standards), this section evaluates the impacts and risks associated with the Petroleum Activity appropriate to the nature and scale of each impact and risk and details the control measures that are used to reduce the risks to ALARP and an Acceptable level.

Environmental Performance Outcomes (EPO), Environmental Performance Standards (EPS), and Measurement Criteria are described in Section 11.0.

6.1 Impact and Risk Scoping

Interactions between activities and aspects are shown in Table 6-1. Where no disturbance, discharges or emissions are identified in Section 3.0, then no planned interactions are shown. If no planned or unplanned aspects are identified for an activity, then no impacts or risks are identified, and it is not included in the subsequent section.

Within this section, impacts are framed as either a “lower order impact” or a “higher order impact”. Higher order impacts require a higher order of evaluation, as described in the NOPSEMA Environment Plan decision making guideline (N-04750-GL1721 A524696) (NOPSEMA 2024a).

All impacts and risks are evaluated at the lower order until one or more factors trigger the impact to be evaluated at a higher level. These factors are:

- Uncertainty or complexity in the impact or risk assessment which requires further analysis or discussion, for example where modelling is required to understand the nature and scale of an impact.
- ALARP decision context B and above (refer to Section 5.2.4).
- Residual risk severity moderate and above (refer to Section 5.2.4).
- Stakeholder concerns (refer to Section 11.0; Appendix 8 -).

Impacts and risks determined to be lower order (as per Section 5.2.4) are presented in Section 6.2, whilst higher order impacts and risks are evaluated in more detail in Section 6.3 onwards. The differentiation between higher and lower order impacts and risks is colour coded in Table 6-1. In some circumstances, lower order risks have been evaluated in more detail within Section 6.3 onwards, such as seabed disturbance, as the assessment process required further explanation.

All impacts that have the potential to cause cumulative impacts, such as the potential for internal concurrent activities, or cumulative impacts from adjacent external activities, have been assessed in within the ECSP OPP. Refer to Section 9.0 for further details of the cumulative impact assessment process and alignment to the impact evaluation of the identified potential cumulative impacts to EPBC listed species within the ECSP OPP.

Table 6-1: Aspect-Activity Interactions

	ASPECT																	
ACTIVITY	**Physical Presence**		**Planned Emissions**				**Planned Discharges**						**Unplanned Impacts**			**Accidental Release**		
Lower Order Impacts and Risks – blue **Higher Order Impacts and Risks - green**	Interaction with Other Marine Users	Seabed Disturbance	Light Emissions	Underwater Sound Emissions	Atmospheric Emissions	GHG Emissions	Drill Cuttings and Fluids	Cement	Other (subsea testing and cleaning discharges)	Cooling Water and Brine	Deck Drainage, Operational discharges and Bilge	Sewage and Grey Water	Interaction with Marine Fauna	Introduction of IMS	Waste (Hazardous and Non-hazardous)	LOC (Chemicals and Hydrocarbons)	Vessel LOC- MDO	LOWC - Condensate
Mooring Operations																		
Mooring Operations		H																
MODU Positioning																		
MODU Positioning	L	H		H														
Well Construction																		
Drilling Operations		H		H			L	L							L	L	H	H
Drilling Cuttings and Fluids		H					L											
Cementing Operations		H																
BOP Installation and Testing	L								L									

	ASPECT																	
Well Completions							L											
Well Clean-up / Flowback			L		L	H												
Logging				H														
Well Shut-in and Suspension									L									
Well Integrity Monitoring																		
Well Integrity Monitoring	L								L									
Support Activities																		
MODU	L		L	H	L	H				L	L	L	L	H	L	L		
Vessels	L	H	L	H	L	H				L	L	L	L	H	L	L	H	H
Helicopter				H	L	H							L			L		
ROV /AUV		H		H					L					H		L		

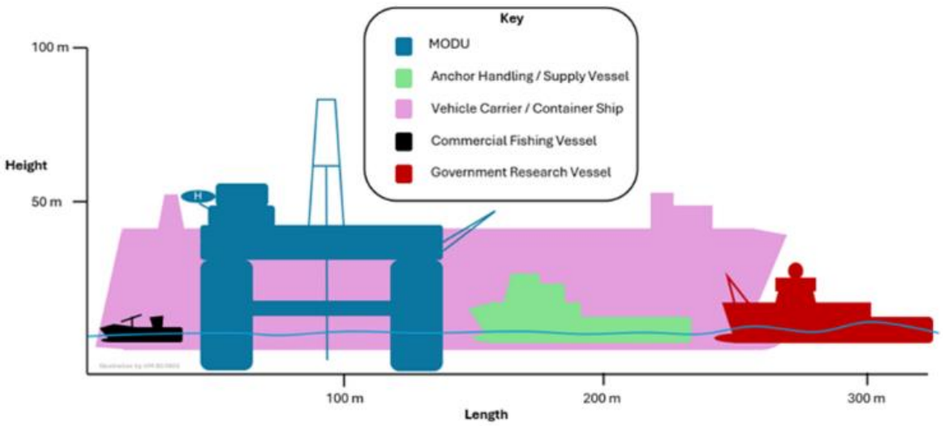
6.2 Lower Order Impact and risk Evaluation

6.2.1 Planned Aspects

Table 6-2: Lower Order Planned Impact and Risk Evaluation

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
Physical Presence								
Physical Presence – Interaction with Other Marine User: • MODU Positioning • BOP / Subsea Tree Installation • Well Integrity Monitoring • MODU operations • Vessel operations	Changes to the functions, interests and activities of other marine users	**Impact: Changes to the Functions, Interests and Activities of Other Marine Users** Displacement of other marine users may occur due to the presence of exclusion zones and support vessels within the operational area. The following zones will be established: • Exclusion / cautionary zone: communicated via Notice to Mariners, and include: – A temporary 3.5 km radius exclusion / cautionary zone around the MODU during well construction activities to allow for anchors, mooring chains and wires to be placed within the operational area (which may extend up to 2.5 km). • Petroleum Safety Zone (PSZ): these are formal safety exclusion zones and are gazetted by NOPSEMA, including: – A permanent (until revoked) 500 m radius around each subsea well. – A temporary 500 m radius around the MODU surface location during the activity. The potential for interaction with other marine users will be greatest when the 3.5 km radius temporary exclusion / cautionary zone is in place during well construction (for approximately 60 days). The permanent 500 m radius PSZ will occur over a more localised spatial extent over a longer duration. Receptors that may be impacted include: • Commercial fisheries. • Shipping and industry. • Recreational fishers and tourism. **Commercial fisheries (State and Commonwealth)** The operational area overlaps 7 State and 6 Commonwealth-managed fisheries management areas, as described in Section 4.4.3. Catch-effort data indicates that the SESS-Shark Gillnet sub-sector and Southern Jig commonwealth fisheries and the southern rock lobster, giant crab, wrasse and multi-species ocean State fisheries are active in the vicinity of the operational area (Section 4.4.3). Fishing vessels will be required to avoid the temporary exclusion /caution z ones, established around the MODU and other Activity vessels, and the long-term PSZ. The exclusion / cautionary zone and PSZ will occur over a small extent of the larger fishing areas available to the fisheries active at the operational area. Previous consultation for offshore drilling activities (Cooper Energy, 2019) indicates that the proposed activities and associated exclusion/caution zones would not result in objections or claims. This is also reflected in the fact that no claims or objections have been raised for the existing PSZs established for Amplitude Energy's existing Otway offshore facilities. **Shipping and industry** Shipping and industry activities in the vicinity of the operational area are described in Section 4.4.3. Ships will need to physically avoid the temporary exclusion / cautionary zones established around the MODU and other Activity vessels and the long-term PSZs. The MODU exclusion zone is temporary and will be in place for the duration of drilling only and the PSZ around wells will be limited to a 500 m radius around each well. There are no designated shipping lanes in the vicinity of the operational area (AHO, 2021), although AMSA notes heavy traffic (Event ID 2025 0520 142220 7349 Appendix 8). AMSA, or other relevant persons, have not raised claims or objections to the Activity and have not previously raised claims or objections to previous Amplitude exploration activities (Cooper Energy, 2019). Vessel interactions will be managed in accordance with navigational requirements. `	Level 1	A	CM01: Marine Exclusion and Caution Zones CM02: Pre-start Notifications CM03: Marine Assurance Process CM04: Fisheries Damage Protocol CM05: Ongoing Consultation CM27: Amplitude Energy Decommissioning Protocol	N/A	N/A	Acceptable, based on: • Impacts well understood. • Consequence is Level 1, therefore no potential to affect biological diversity and ecological integrity. • Activity will not result in serious or irreversible damage. • Good practice controls defined and implemented. Legislative and other requirements have been identified and met: • *OPGGS Act* • *Navigation Act 2012* • Amplitude Energy MS Standards and Processes have been identified. • No claims or objections raised during consultation. Impacts are expected to be below the defined acceptable levels as described in the OPP by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence is the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		Recreation and tourism Key tourist and recreational activities are described in Section 4.4.3 and typically include land-based or near-shore activities (i.e., sight-seeing, diving, fishing including recreational, game, or charter fishing). Therefore, there is limited overlap with the deep offshore waters of the operational area. The presence of exclusion / cautionary zones and the PSZs may result in the exclusion of tourist and recreational marine users from the operational area. Given the distance from shore and the limited size of exclusion / cautionary zones and PSZs, impacts to tourists and recreational marine users are expected to be minimal. **Summary** Impacts have been assessed as **Level 1**, based on: • The short-term duration of drilling activities when the temporary exclusion / cautionary zone will be in place around the MODU (~60 days). • The localised spatial extent of the long-term PSZs around each well, noting these exclusion zones are an accepted tool for managing risks to equipment and marine users. • The level of use of the operational area by commercial fisheries is relatively low, with no claims or objections to the existing Otway offshore facility development to date. • The operational area covers a small extent of the identified Commonwealth and State-managed fisheries management areas. • The level of use of the operational area by shipping, industry, recreation and tourism is expected to be low.						additional objections and claims were raised against this aspect.
Physical Presence - Visual	Additional vessels observable from the coast	**Impact: Additional Vessels Observable from the Coast** The physical presence of the MODU and support vessels has the potential to affect the view of the coastline or ocean. The Australian Heritage Database (DCCEEW, 2025) entry assessment against criterion E (aesthetic characteristics) identifies the Great Ocean Road and Scenic Environs as demonstrating outstanding scenic landscape values and a diversity of natural landscapes. The scenic environs include all views from the Great Ocean Road and Great Ocean Walk. Included within the environs and of particular significance are: • The Twelve Apostles - a distinctive and spectacular group of rock formations widely recognised by the Australian community, serving as an inspirational landscape capable of evoking strong emotional responses. • The Bay of Islands and Bay of Martyrs, while less widely known, are similar, but younger, geomorphological formations and are also important aesthetic elements of the coastline. • The coastline from Lorne to Kennett River offers among the world's most dramatic cliff and ocean scenery able to be viewed from a vehicle. Along the length of the Great Ocean Road, the pullover points and lookouts beside or nearby the road provide travellers with spectacular views of the coastline, hinterland, and Bass Strait seascape, framed only by cliffs, lighthouses and unencumbered by intrusive built structures. The Australian Heritage Database (DCCEEW 2025a) assessment against criterion G (social and cultural reasons) describes the landscape as highly valued by many Australians and has obtained iconic status. For many Australians, the Great Ocean Road is synonymous with tourism and holidays, with over 7 million visits by Australians to the Great Ocean Road region annually. Visitors are attracted to the iconic, spectacular scenery experienced on the scenic journey and the accessibility of the historic shipwrecks along the coast, which help deepen the visitor experience by interpreting themes of immigration, shipping and trade. Criterion G explains how elements of the Great Ocean Road relate to shipping and trade. The lighthouses that are landmarks along the road were established to facilitate shipping and continue to do so today. The Bass Strait has historically been, and remains an important shipping route, with vessels continually transiting the waters off the Otway coast to and from intentional ports that are critical infrastructure including the ports of Portland, Geelong and Melbourne. Given the maritime history, and current maritime activity in the region, it is considered that observing	Level 1	A	CM02: Pre-start Notifications CM:06 Ongoing Consultation	N/A	N/A	Acceptable, based on: • Impacts well understood. • Consequence is Level 1, given the short duration that the MODU and vessels are present, and limited divergence from the values of the Scenic Environs which already features commercial fishing and shipping activity. • Activity will not result in serious or irreversible damage. • Good practice controls defined and implemented. Legislative and other requirements have been identified and met: • OPGGS Act • Navigation Act 2012 • Amplitude Energy MS Standards and Processes have been identified. Impacts are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		vessels from the Great Ocean Road would not be considered unusual or detracting from the values of the Great Ocean Road. Instead, vessels are in keeping with the historical and current maritime context. It is relevant to consider the existing vessel traffic in the Otway to contextualise the Activity vessels and MODU presence. It is assumed that at least four large merchant ships would usually transit through the Otway on any given day. This is considered conservative given Victorian ports alone have over 4,000 ship visits per year (Bureau of Infrastructure and Transport Research 2023), which would put the average daily ship transits through Victorian waters at over 10. The kinds of vessels (and their approximate dimensions) that occur in the region are illustrated below (Figure 6-1), with fishing vessels and container ships being among the most common types. For the Activity the MODU is on location for approximately 60 days to drill and complete Annie-2 development, and vessels would be offshore to support the MODU as well as for survey or inspection campaigns with shorter durations 7-21 days) over the EP 5-year term. Once the MODU and vessels are gone, all equipment is located subsea and therefore not observable from shore, as is the case with Amplitude's current subsea gas production infrastructure.  *Figure 6-1: Common Vessel Types Offshore and their Relative (Approximate) Dimensions* **Summary** Overall, it is concluded that the MODU and support will not encumber the view of the coastline or ocean from the Great Ocean Road. The MODU and support vessels will be offshore for ~60-days. There will be visibility of the MODU and vessels offshore for a relatively short period. However, the view of these will not be in complete contrast to daily shipping already present in the region and would therefore be expected to evoke a similar level of emotional response to shipping. There will also be no ongoing visual impacts from the Activity once the MODU and support vessels have completed the scope. Therefore, the impact of the physical presence of the MODU and vessels on the view from the Ocean Road is assessed as being of **Level 1** consequence.						acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence is the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no additional objections and claims were raised against this aspect.
Emissions								
Emissions – Light • Well Clean-Up and Flowback • Vessel Operations	• Change in ambient light • Change in fauna behaviour	**Impact: Change in Ambient Light** Ambient light is classified as light which already exists within an environment. Ambient artificial light sources in the Otway region include permanent (e.g. onshore/offshore developments) and intermittent (e.g. vessels, road traffic) sources. During the activity, sources of artificial light (Figure 6-3) will include: • Continuous lighting on the MODU and vessels, required for maritime safety purposes in accordance with requirements of the Navigation Act 2012.	Level 1	A	CM03: Marine Assurance Process CM05: Ongoing Consultation	N/A	N/A	Acceptable, based on: • Impacts well understood. • Consequence level is Level 1, therefore no potential to affect biological diversity and ecological integrity.

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
• MODU Operations		• Flaring may introduce localised and temporary light emissions during well clean-up and flowback for an approximate duration of 36 hours. The approximate height of the flare is 45 m above sea level. Once vessels have vacated the region and the well clean-up and flowback activities are complete, these additional light sources will no longer be present. There are no permanent sources of light associated with the Activity. Impacts associated with light emissions from the Activity are defined by Light Exposure Areas (i.e. the area over which light exposure may impact sensitive species): • The Operational Light Exposure Area (i.e. associated with artificial lighting on the MODU and vessels) is defined by the National Light Pollution Guidelines for Wildlife (DCCEEW 2023a) which recommends a 20 km threshold as a precautionary limit to identify species and important habitats potentially impacted by artificial light. This distance is considered conservative and is based on observed effects of sky glow on marine turtle hatchlings demonstrated to occur at 15-18 km and seabird fledglings grounding in response to artificial light 15 km away (DCCEEW 2023a). • The Flaring Light Exposure Area is defined based on a review of comparative light emissions modelling to ensure an appropriate analogue, including: – Light modelling conducted by Xodus Group for ConocoPhillips Australia calculated that ambient light intensity levels are reached beyond 49 km of a flare with a flowrate of 40 MMscf/day located 45 m above sea level (Xodus, 2023). – Light modelling by Pendoley Environmental Pty Ltd for Santos' Dorado Development calculated flaring events of <48 hours in duration, at a rate of ~125 MMscf/d, is no longer visible at 42.4 km, when the flare drops below the horizon. The flare height was conservatively estimated as 110 m above sea level (Pendoley, 2020). – Other modelling studies conducted for production flaring activities produced comparable spatial extents; 51 km for Shell's Prelude Activity (Shell, 2009) and 47.9 km Woodside's Browse FLNG development (Woodside 2014. In both of these instances the flare heights are 150m and 154m respectively. – Light modelling by Xodus Group and Pendoley Environmental Pty Ltd assumes flaring flowrates of 40 and ~125 MMscf/day, respectively. In comparison flaring flowrates for the Activity is expected to be ~60 MMscf/day. Despite having a lower flowrate, light modelling by Xodus Group predicts the most conservative flaring light emissions spatial extent of 49 km from the source. Further, estimates by Xodus Group were developed based on an appropriate MODU analogue similar to the one that will be conducting the drilling campaign. Light emissions will result in a temporary change in ambient light within the relatively localised Light Exposure Areas. The MODU and support vessels will be present for ~60 days – where the extent of operational light exposure is within 20km of the MODU and support vessels. The light emissions associated with flaring will be of a shorter duration – approximately 36 hours for well clean-up activities and associated flaring and relatively localised (conservatively within 49 km of the MODU). A change in ambient light has been assessed as being of **Level 1** consequence.			CM06: Light Management Measures CM07: Well Testing Program CM15: Campaign Risk Review (modelling review)			• Risk level to receptors a result of the change in ambient conditions is low • Activity will not result in serious or irreversible damage. • Legislative and other requirements have been identified and met, and guidelines considered: – National Light Pollution Guidelines for Wildlife (DCCEEW, 2023a) - including marine turtles, seabirds and migratory shorebirds. – EPBC Act Policy Statement 3.21— Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species. • Activity will not impact the recovery of: – Albatrosses and Giant Petrels as per the National Recovery Plan for Albatrosses and Petrels 2022 (CoA 2022). – Seabirds as per the Wildlife Conservation Plan for Seabirds – Orange-bellied Parrot as per the National Recovery Plan for the Orange-bellied Parrot (Neophema chrysogaster) (DELWP, 2016). – Recovery plan for marine turtles in Australia 2017–2027 (CoA, 2017).
		Risk: Change in marine fauna - marine turtles Light emissions from the MODU, support vessels and flaring (if required) may result in a localised change in marine turtle behaviour. DCCEEW (2023a) identify marine turtles as being sensitive to light emissions. Light emissions can disrupt behavioural in-water dispersal behaviours of marine turtles by interfering with natural lighting and silhouettes (DCCEEW 2023a; CoA 2017). Critical behaviours for marine turtles are generally carried out within spatial extents defined by marine turtle BIAs and habitat critical to the survival of marine turtle species. PMST reports for the 20 km and 49 km Light Exposure Areas can be found in Appendix 5 - . The PMST report (Appendix 5 -) identified three marine turtle species; loggerhead turtle (endangered), leatherback turtle (endangered) and green turtle (vulnerable), that may / are likely to have a habitat within the Light Exposure Areas. There are no known BIAs or habitats critical to the survival of marine turtle species and no nesting sites or nesting behaviours identified in the area. Nevertheless, the PMST report identified that breeding behaviours are likely to occur within Flaring Operational Area.	Level 1	A		Unlikely (D)	Low	

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		Behavioural changes to marine turtles from artificial light at night are expected to be localised (49 km) and short term, with light levels returning to existing ambient levels following completion of the activity with no remedial or recovery work required. Therefore, the consequence has been assessed as **Level 1**. The risk event could happen when additional factors are present, such that individual marine turtles are present within 49 km of flaring operations or within 20 km of MODU and vessel operations. However, as there are no BIAs or habitat critical to the survival of marine turtles within the Light Exposure Areas, the likelihood of the risk is considered to be **Unlikely (D)**, therefore the Risk severity is **Low**.						– Recovery Plan for the White Shark (Carcharodon carcharias) 2013 • Amplitude Energy MS Standards and Processes have been identified.
		Risk: Change in marine fauna - avifauna Light emissions may cause behavioural change to nocturnal seabirds by disrupting vision at night. The potential for disorientation from light emissions is exacerbated with an increase in proximity of nesting sites or migrating sites to artificial light sources (DCCEEW 2023a). There are 9 BIAs for seabirds within the Operational Light Exposure Area, all of which are for foraging (Figure 6-4 to Figure 6-6). There are an additional two BIAs within the Flaring Light Exposure Area for foraging and breeding short-tailed shearwater (*Adrenna tenuirostris)*. Given the large areas typically covered by foraging individuals, the transient nature of the species, and the temporary nature of the light from the activity; any alterations in offshore foraging behaviour would be expected to be short-term and localised, impacting individuals, and would not be expected to significantly affect foraging success of seabird populations in the region. Similarly, due to the temporary and short-term nature of any light emissions, any impacts to short-tailed shearwater breeding sites, such as disorientation of fledglings or deterrence of breeding birds, are not expected to impact the breeding success of the site. It is acknowledged that disorientation of fledglings may be fatal due to fallouts over ocean or groundings (Rodríguez et al. 2017; Marangoni et al. 2022). However, a single disturbance event over a short time period is unlikely to have an immediate effect on survival or breeding productivity of an individual bird. Therefore, no population level impacts are anticipated. The PMST report (Appendix 5) identified the critically endangered orange-bellied parrot (*Neophema chrysogaster*) as being known to occur within the Flaring Light Exposure Area. The only relevant risk identified in the National Recovery Plan for the orange-bellied parrot (DELWP, 2016) is the threat of barriers to migration of the species which includes the presence of illuminated structures or vessels which occur within the migration route. Flaring activities, although not within the migration route, may result in light which is visible from within the western portion of the probable migration route near the Victorian coastline. Therefore, only a small number of individuals (if any) have the potential to be behaviourally impacted by the change to ambient light as a result of flaring activities. These activities are expected to be intermittent and short-term (maximum of 36 hours of flaring) with levels returning to existing ambient levels following the completion of the activity. The PMST report also lists the swift parrot (*Lathamus discolor*) and the curlew sandpiper (*Calidris ferruginea*) as being known to be present in the Flaring Light Exposure Area, both are critically endangered migratory species. There are no threats listed in the National Recovery Plan for swift parrot relating to potential disturbance or disruption to migratory pathways (DCCEEW 2024c). Similarly, conservation advice for the curlew sandpiper also does not list any key threats associated with migration (TSSC 2015d). Behavioural changes could increase the risk of birds colliding with infrastructure or vessels, entrapment, stranding, grounding or displacement from usual migration routes (DCCEEW 2023a). Collisions of birds with offshore oil and gas infrastructure has been reported in the North Sea (Hüppop *et al.* 2016). It is predicted that mortality from collision would only impact a small proportion of seabird populations (Hüppop *et al.* 2016). The Activity will not have any topside infrastructure, and artificial lighting will only be present for a short duration during the activity. Therefore, any injury or mortality to seabirds as a result of a behavioural response to light emissions is not expected to cause any impacts at a population level. The flare itself may also present a hazard to birds, as the flare boom can provide a perch for individual birds which may be susceptible to burning. Due to the very short duration of flaring (36 hours) on an intermittent basis, this impact is not expected to occur and can be managed via standard practices such as flare watch and start-up procedures. Given the limited presence of sensitive receptors within the Light Exposure Areas, and the temporary nature of light emissions, the impact of light emissions to marine avifauna will be **Level 1**.	Level 1	A		Unlikely (D)	Low	• No claims or objections raised during consultation. Impacts are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence is the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no additional objections and claims were raised against this aspect.

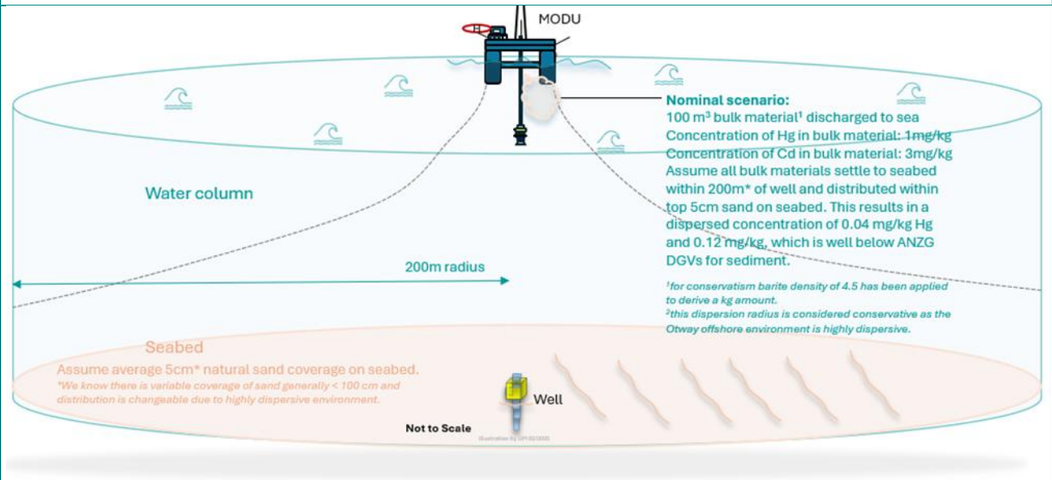
Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		The risk event could happen if birds are present within the Light Exposure Areas. Given the wide foraging and migratory ranges of seabirds and shorebirds and the short duration of activities, the likelihood of the risk event is considered to be **Unlikely (D)** and the Risk severity is **Low.**						
		Risk: Change in Marine Fauna - Plankton and Fish (including Eggs and Larvae) The National Light Pollution Guidelines for Wildlife (DCCEEW 2023a) also identifies plankton and fish as being sensitive to light emissions. Zooplankton (including fish eggs and larvae) migrate upwards at dusk and downwards at dawn (Nocera et al. 2020). Suppressing or attracting zooplankton to the surface may disrupt zooplankton night feedings and in turn impact the movement and food availability for larger nocturnal fish predators. For example, adult benthopelagic fish display large daily vertical migrations that match pelagic prey availability and movements of zooplankton (Afonso et al. 2014). Artificial light may also bring diurnal fish predators into competition with their nocturnal counterparts and increase predation pressure to nocturnal prey. The Flaring Light Exposure Area overlaps with a BIA for white shark. Exposure to intermittent flaring or navigational lighting during the Activity may disrupt rhythmic behavioural activities of individuals (Carroll and Harvey-Carroll 2023; Colefax et al. 2020). The increased presence of zooplankton and foraging fish at night may attract larger fish species, such as white sharks (Carroll and Harvey-Carroll 2023). Light emission modelling conducted by Xodus (2023) for ConocoPhillips Australia indicated that light emission levels that reflect twilight levels are reached within 500 m of a flare. It is anticipated that the suppression or attraction of plankton will occur within 500 m of flaring or MODU and vessel operations, which in turn impacts the movement and food availability for larger nocturnal fish predators within 500 m. Impacts, if any, would be limited to temporary behavioural changes to small numbers of plankton and fish within proximity of artificial light sources in surface waters of the operational area. Given the temporary, short-term, localised nature of light emissions, impacts would be limited to temporary behavioural changes to plankton and fish in the surface waters near the light source. Therefore, the consequence of impact of light emissions to plankton and fish (including eggs and larvae) is assessed as **Level 1**. The risk event could occur if plankton and fish are within close proximity of the MODU and support vessels or flaring activities. The highly variable presence of plankton and fish populations in the operational area presents a potential overlap of plankton and fish with the Light Exposure Areas. Therefore, the likelihood of the risk event is considered to be **Likely (B)** and the Risk severity is **Low**.	Level 1	A		Likely (B)	Low	
		Risk: Change in Marine Fauna - Marine Invertebrates Light emissions may cause behavioural changes to marine invertebrates, such as cephalopods and lobsters. However, light emissions in the operational area have very limited potential to suppress or change the nocturnal activities of invertebrates at the seabed given the depth of water (>50 m) between the temporary light sources at sea surface and strong light attenuation in the upper 50 m of the water column (McCafferty et al. 2004). Impacts from the operational and intermittent flaring light emissions to marine invertebrates will be limited to incidental behavioural changes, such as the potential for increased attraction to the light source of mobile invertebrates, such as cephalopods, within a smaller spatial extent than the Light Exposure Areas. Arrow squid is a targeted species for the Southern Squid Jig Fishery. Squid are highly attracted to artificial lights at night. This is demonstrated by the use of lights at night while jigging which is an active fishing method used by the Southern Squid Jig Fishery (AFMA, 2022). Light emissions in the operational area are expected to temporarily attract squid and other cephalopods up to the sea surface towards the light source (Imbrahim and Hajisamae, 1999). Behavioural changes to marine invertebrates from artificial light at night is expected to be localised and short term based on expectations that navigational/operational light emissions sources are short term and highly localised. Therefore, the consequence is assessed as **Level 1**. The scattered and patchy presence of marine invertebrate communities in the operational area presents a potential overlap of marine invertebrates with the Light Exposure Areas; therefore, it is likely the risk event will occur. The likelihood is assessed as **Likely (B)** and the Risk severity is **Low**.	Level 1	A		Likely (B)	Low	

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
Emissions – Atmospheric: • Well Clean-Up and Flowback • Vessel Operations • MODU Operations • Helicopter Operations	Change in air quality	**Impact: Change in Ambient Air Quality** Atmospheric emissions typically include sulphur oxides (SO_X), nitrous oxides (NO_X), particulate matter (PM10 and PM2.5), and Volatile Organic Compounds (VOCs). Impacts and risks associated with the generation of GHGs such as carbon dioxide (CO_2), methane (CH4) and N_2O are evaluated in Section 6.4. Atmospheric emissions will be generated by the combustion of fuel for power generation by the vessel, MODU and helicopters. These emissions will be continuous from the MODU power generation systems during the activity. The vessels and helicopters will not be in field continuously over the duration of the activity. The maximum number of vessels in the operational area at a time is expected to be 3 AHTS plus the MODU during well construction. The MODU will be present for 60 days during well construction. Atmospheric emissions will also be released from well clean-up and flowback activities during the well construction phase and will occur for a duration of 36 hours. Impacts to ecological and social receptors within or beyond the operational area are not predicted, as a reduction in air quality is limited to within the immediate proximity of the release source and is temporary, as pollutants would be rapidly dispersed to the offshore airshed by prevailing winds (Tetra Tech Coffey 2024). Therefore, impacts to marine fauna and social receptors from a change in air quality are not expected and have not been evaluated further. Given the localised and temporary nature of the change in air quality, the consequence of any impacts from atmospheric emissions are assessed as **Level 1**.	Level 1	A	CM03: Marine Assurance Process CM05: Ongoing Consultation CM08: Planned Maintenance System	N/A	N/A	Acceptable, based on: • Impacts well understood. • Consequence level is Level 1, therefore no potential to affect biological diversity and ecological integrity. • Activity will not result in serious or irreversible damage. • Good practice controls defined and implemented. • Legislative and other requirements have been identified and met: – Ozone Protection and Synthetic Greenhouse Gas Management Act 1989. – Marine Order 97 (Marine pollution prevention – air pollution) 2013. • Amplitude Energy MS Standards and Processes have been identified. • No claims or objections raised during consultation. Impacts are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence is the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no additional objections and

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
								claims were raised against this aspect.
Planned Discharges								
Planned Discharges – Drill Cuttings and Fluids: • Drilling • Completions • Well Abandonment (Contingency)	Change in water quality Change in sediment quality	In Australia, it is standard practice for drill cuttings and fluids to be discharged to surface waters or at the seabed over the course of the activity where there is a low impact / risk to the environment. The Activity will involve the drilling of one top-hole, with well construction activities expected to occur for 60 days. In the unlikely event that the well does not access commercially viable resources well abandonment (P&A) activities will be undertaken to isolate the reservoir section of the well and eliminate the risk of a potential release of reservoir fluids. Annie 2 development well does not require the use, or contingent use of Synthetic Based Drilling Fluids (SBDF). <u>Planned Discharges - Seabed</u> Discharges to the seabed during the planned drilling of the top-hole section on the well will be approximately: • 150 m^3 of drill cuttings. • 1,500 m^3 of water-based drilling fluids. <u>Planned Discharges - Surface</u> Discharges released to the surface during the Activity will be approximately: • 180 m^3 of drill cuttings. • 2,000 m^3 of associated drill fluids. The Amplitude Energy Offshore Chemical Assessment Procedure provides the framework and triggers for the preferential selection of lower toxicity WBMs over synthetic fluids. The process also provides for the preferential selection of specific grades of chemical, being OCNS CHARM rating of GOLD or SILVER, a non-CHARM “E” or “D” classification or PLONOR. Where this is not achievable, further assessment, justification and investigation of alternatives is required to be undertaken. <u>Potential Discharges - Unused Bulk Material Disposal</u> Upon completion of the well activities, residual barite and bentonite will be managed in accordance with Figure 12-9. Amplitude Energy’s preference will be to transfer unused bulk products to the next client with the MODU, however, if this is not possible, an unused bulks management process (Figure 12-9) has been developed to allow for consideration of disposal options other than overboard discharge which has been standard practice in industry. Amplitude Energy will continue investigating options to manage bulk materials to avoid overboard discharge of residual bulks; this will be done via industry collaboration and with relevant service partners (cementing / fluid services). If bulks are discharged, they would be mixed with seawater and discharged to sea as a slurry. It is anticipated that in the worst-case scenario a batch volume of ~50 m^3 of barite and ~50 m^3 bentonite (accounting for possible leftover contingency) would be discharged at the end of well construction. Although this aspect is assessed as having a ‘low order’ impact; Amplitude Energy has reviewed and assessed additional controls to ensure that impacts are managed to ALARP. Table 6-3 identifies and assesses additional controls. <u>Plug and Abandonment Discharges</u> Abandonment activities will be assisted by a MODU, and operations are expected to occur for 30 days per well. Well abandonment operations involve setting a series of cement and mechanical plugs within the wellbore, to ensure isolation of the reservoir and mitigate the risk of reservoir fluid release into the marine environment. Plugs are then tested to confirm integrity. Well abandonment operations may result in the discharge of fluids (treated sea water, completions fluids, drilling fluids) as well as cement discharges. These discharges will occur intermittently throughout the well abandonment activities, generally released in batches, typically lasting less than 24 hours. For context, a study conducted on the Northwest Shelf during a drilling campaign surveyed the fate of drill cuttings and fluids for 3 wells in water depths ranging from 19 to 128 m (Jones et al. 2021). The total discharge volume of drill cuttings and fluids was found to be 1,543 m^3. The study is considered an appropriate and conservative comparison to the depths of the Activity (57 m). It should also be considered that lower ocean hydrodynamics are typically found in	Level 1	A	CM09: Offshore equipment (solids equipment) CM10: Amplitude Energy Offshore Chemical Assessment Procedure CM11: Titleholder Collaboration C13: Inventory Management CM13: Offshore Operational Procedures (Drilling Discharges Management) CM14: MODU Material Transfer Process CM15: Campaign Risk Review See Table 6-3 for an assessment of additional controls.	N/A	N/A	Acceptable based on: • Impacts well understood. • Consequence level is Level 1, therefore any potential impact to the species and habitat will be localised, short-term and not affect ecosystem function. • Risk level to receptors a result of the change in ambient conditions is low. • Activity will not result in serious or irreversible damage. • Legislative and other requirements have been identified and are provided for: Minamata Convention Activity will not impact the recovery of: – Blue whale as per the Blue Whale Conservation Management Plan 2015 – 2025 (DoE 2015a) – Southern right whale as per the National Recovery Plan for the Southern Right Whale (DCCEEW 2024b) – Marine turtles as per the Recovery Plan for Marine Turtles in Australia, 2017 – 2027 (CoA 2017a). • Good practice controls defined and implemented. • Amplitude Energy MS and Processes have been identified.

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		the Northwest Shelf region compared to the Otway area, and the study was conducted over sensitive areas that have a higher diversity of benthic assemblages than the operational area of the Activity. **Impact: Change in water quality** Planned discharges of drill cuttings and fluids into the marine environment are expected to result in a change of water quality. As described in Section 3.4.3, a combination of seawater and high-viscosity gel sweeps will be used as drilling fluid for the initial conductor and surface-hole sections. Subsequent intermediate and reservoir-hole sections will be drilled with WBM. Drill cuttings and fluids discharged from the well will occur intermittently during drilling (typical discharges in batches between 10-100 m^3). Drilling fluids (WBM) will be discharged at the seabed which will result in localised increased turbidity in the water column surrounding the well. The cuttings and fluids will settle rapidly within proximity to the well, with finer particles (approximately 10% of the discharge volume) dispersing further within ocean currents (Hinwood et al. 1994). When drill cuttings and drilling fluids are discharged from the MODU at the sea surface, the larger particles (approximately 90%) form a plume which will rapidly drop out of suspension in the water and settle on the seabed. Finer solids of the mass will form another plume in the upper water column, which will be transported by prevailing currents away from the source and will rapidly dilute in the water column (Neff 2005; 2010). Studies have found that in well mixed oceans, comparable to the Otway basin, a drill cuttings and fluid plume is diluted by more than 100-fold within 10 m of the discharge (Neff 2005), with drilling fluid concentration falling to below acute toxicity threshold of 10,000 ppm within 100 m of the discharge source (Neff 2010). A study conducted in the Northwest Shelf, found sporadic and intermittent Total Suspended Solid (TSS) concentrations up to 10 mg/L ~1 km from the discharge point lasting over a period of minutes for each discharge event (Jones et al. 2021). Metals are present in most WBMs and have been shown to have a low bioavailability as they tend to remain in a non-ionic form, remaining bound to other compounds, presenting a low toxicity risk to marine fauna. Barium is the most abundant metal in most WBM and nearly all the barium in drilling mud is from barite ($BaSO_4$), which is added to the mud to increase its density (Neff 2005). Barite used during the drilling activities will have very low concentrations of mercury (Hg) and cadmium (Cd) (less than 1 mg/kg and 3 mg/kg respectively). A study investigating barite solubility and release of trace metal compounds observed <1% of the mercury and 15% of the cadmium dissolved from the barite after one week of exposure to the marine environment (Crecelius et al. 2007). Other metals present in drilling wastes, mainly as salts, may originate from formation cuttings or from impurities in barite and other mud components. Furthermore, the concentrations of these components within barite are so low (Sadiq et al. 2003) that barite is referred to as inert from a toxicological perspective (Crecelius et al. 2007). As such, these do not contribute to sediment toxicity due to their low bioavailability (Schaanning et al. 2002). The intermittent and temporary turbidity levels generated from drilling discharges are expected to be within the high natural variability of water column turbidity on the Victorian coastline (Section 4.3). The increased turbidity levels will be short-lived and highly localised within close proximity of the source. The south-east marine region, in addition to the north marine region, has the lowest water clarity and least seasonality of the six marine regions around the coast of Australia (Richardson et al. 2020). As a result, it is expected that the short-lived and localised increase in turbidity from drilling discharges would be less significant in the south-east than in marine regions with clearer waters, such as the north-west. Environmental impacts to water quality by drilling mud and cuttings discharges are considered low due to their intermittent nature, short duration during drilling and composition (i.e. rock and water-based fluids) (Neff 2005). Hinwood et al. (1994) considers the main environmental disturbance from discharging drilling cuttings and fluids is associated with the smothering and burial of sessile benthic and epibenthic fauna, discussed below. A 1 km exposure area, acknowledged by Jones et al. (2021), is considered conservative and well within the 3 km radius that comprises the operational area around the well during drilling. **Impact: Change in sediment quality**						• No claims or objections raised during consultation Impacts are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence is the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no additional objections and claims were raised against this aspect.

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		Deposition of drill cuttings and fluids during drilling operations are expected to result in a change in sediment quality. WBM and cuttings solids tend to settle and accumulate on the seafloor. If discharged at or near the surface, the cuttings and mud disperse in the water column over a wide area and settle as a thin layer on the seabed (Neff, 2005). Several field studies found that drill cuttings discharged in water depths < 300 – 400 m typically deposit in sediments within about 100 – 200 m of the discharge (Sanzone et al. 2016). In 2016 the International Association of Oil and Gas Producers (IOGP) summarised field, laboratory and modelling studies relating to cuttings discharges. Seafloor discharge of cuttings and adhered WBM was shown to occur within 10–150 m of the discharge source; whereas cuttings discharged near the surface tend to accumulate on the seafloor down-current from the discharge at distances of ~0.1–1 km (Sanzone et al. 2016). Such surface discharges undergo higher levels of dispersion of smaller cuttings within the water column resulting in a thinner layer near the well site. Metals composition of WBM and cuttings resembles that of natural marine sediments, albeit with concentrations of some metals higher than background concentrations in uncontaminated marine sediments (Neff 2005). Water-based drilling fluids have been shown to have little or no toxicity to marine organisms due to the inert / PLONOR (Poses Little or No Risk to the Environment) nature of its components (Jones et al. 1996; Neff 2005). Barite, an insoluble component of WBM discharges, has been widely shown to accumulate in sediments following drilling (reviewed by Hartley, 1996) and is of low bioavailability and toxicity to benthic organisms. Barium concentrations greater than about 2,000 mg/kg in soils and sediments suspected of being contaminated with drilling wastes may indicate the presence of drilling muds or cuttings. However, it has been recognized that some clean soils and sediments may contain up to 8,000 mg/kg of barium (Neff 2002). A study conducted in the Gulf of Mexico at 3 continental shelf drilling discharge locations (37 to 119 m water depth), where water-based drilling fluids and cuttings were discharged, found barium to accumulate to high concentrations in surface sediments within 100 m of the platforms (4,640 to 121,000 mg/kg). In one year between the first and second post-discharge surveys, seabed barium concentrations were observed to have decreased up to 80% (Sanzone et al., 2016). Based on the field, laboratory and modelling studies discussed above, it is expected that deposited drilling discharges on the seabed will result in a change of sediment quality following the introduction of drilling discharges to seabed sediments within 200 m of the drilling location (Sanzone et al. 2016). It is expected within the first couple of years post-drilling, the concentration to drilling components will decrease by up to 80% from natural dispersive and degradative processes influenced by the high energy environment in the operational area (Sanzone et al., 2016). Therefore, changes to sediment quality due to drilling discharges during the Activity are expected to be temporary in nature and localised within close proximity of the source. To understand the potential distribution and concentration of the heavy metals mercury (Hg) and Cadmium (Cd), a dispersion and dilution estimate was undertaken, factoring in a 200m dispersion radius (Figure 6-20. The estimate indicates residual concentrations of Hg and Cd originating from bulk materials, once dispersed within a 200 m radius of shallow sand around the well, would be well below the applicable ANZG DGVs for sediment, and therefore no discernible ongoing impacts. A 1 km exposure area is considered conservative and well within the 3 km radius that comprises the operational area around the well during drilling.						

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		 *Figure 6-2: Illustration of Dispersion of Bulk Materials* **Summary** Water and sediment quality within the operational area is expected to be representative of the expected quality found in Otway Basin waters. Given the impacts will be temporary, in close proximity of the source, the consequence of any impacts from drill cuttings and fluid discharges are assessed as **Level 1**.						
	Change in benthic habitat	**Impact: Change in benthic habitat** The deposition of drill cuttings and fluids on the seabed will result in a localised change to benthic assemblages from direct burial of benthic biota and change in benthic substrates. Benthic fauna within the operational area are expected to be limited to patchy epifauna as found in surveys of the adjacent existing Otway offshore development operational area and associated facilities (Fugro, 2020). The epifauna, including sponges, bryozoans and hydroids, though patchy in their distribution, were observed on both hard and unconsolidated substrates. Rock cuttings from drilling will add to the unconsolidated substrates and will redistribute over time influenced by the surrounding morphology, currents, prevailing weather and would not be expected to significantly alter the overall character of the seabed, or its ecological amenity. Benthic assemblages in the operational area are characteristic of the shelf rocky reef and hard substrate KEF that is well represented in the wider Bass Strait region (Table 4-3). Activities occurring within the operational area are likely to result in seabed disturbance to the KEF and impact some of the associated values, such as diversity and productivity of the hard substrate which are often colonised by sponges, sessile invertebrates, soft corals. Results from a 2020 seabed survey adjacent to the operational area observed hard ground and patchy epifauna, consistent with the description of the KEF, however no reef-type structures of high relief were observed (Fugro, 2020). The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location. The operational area does not overlap AMPs, and no ecological communities listed as threatened under the EPBC Act have been observed. The effects of drilling cuttings deposits on bottom living biological communities are caused mainly by burial, changes in sediment texture, and low sediment oxygen concentrations that result from microbial degradation of organic matter (Sanzone et al. 2016). However, the recovery of benthic communities from these effects is expected to occur by the colonisation of new organisms and subsequent migration from adjacent undisturbed sediments. Ecological recovery typically begins shortly after drilling is completed and is often well advanced within a year.						

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		Studies have shown that impacts to benthic assemblages from drilling discharges are highly localised (Sanzone et al. 2016) and can recover rapidly to post drilling conditions. Several monitoring studies reviewed by Sanzone et al. (2016) observed a substantial recovery in benthic communities within one to a few years after drilling discharges. Observations within the existing Otway offshore field have also shown high levels of colonisation of disturbed seabed and equipment since it was installed in mid-late 2000's (Fugro 2020a; 2020b). A monitoring study in the Minerva gas field (60 m water depth) off the south coast of Victoria (located 10.7 km east of the proposed Annie-2 development well), observed the benthic impacts of exploration drilling and WBM discharge (Currie and Isaacs 2005). Benthic community structure in sediments collected along transects from the wellhead to 6,400 m away was studied shortly before and for up to 11 months after exploration drilling. Drill cuttings were observed in some grab samples collected four months after drilling but not in any samples collected after 11 months. Immediately after drilling, the abundance of benthic fauna and faunal diversity decreased by 45 to 75% in sediments within about 100 m of the discharge and most faunal changes were no longer detectable after four months. It was noted that modified benthic communities persisted for at least 11 months after completion of drilling at stations closest to the MODU. Findings indicated impacts of WBM and cuttings discharges were localised within approximately 100 m of the source and benthic ecosystem recovery was well advanced in less than one year. Based on the low overall ecotoxicity associated with water-based fluids; no effect concentrations would not be expected to be exceeded beyond the near vicinity of the well and would only be apparent for short durations (Neff, 2010). Any decrease in the abundance and biomass of epifauna would be localised and recoverable, with no threat to EPBC Act listed threatened benthic fauna. Therefore, given the localised and recoverable nature of change in benthic habitat, the consequence is assessed as **Level 1**.						
	Injury / mortality to marine fauna	**Risk: Injury/mortality to marine fauna - Plankton and Fish (including eggs and larvae)** Pelagic fish (including eggs and larvae) and plankton are receptors with the potential to be exposed and most at risk of injury or mortality to an increase in turbidity levels from the surface discharge of drill cuttings and fluids. Plankton communities typically have a patchy distribution which is directly connected to localised and seasonal productivity that produces sporadic bursts in phytoplankton and zooplankton populations (CoA 2015c). Impacts to fish larvae is expected to be limited due to high natural mortality rates (McGurk 1986), intermittent exposure and the dispersive characteristics of the open water in the operational areas. Hinwood et al. (1994) and Neff (2005) found that turbidity in the water column associated with discharges of cuttings and adhered fluids is expected to be reduced to below 10 mg/L (9 ppm) within 100 m of release. This indicates that suspended sediment concentrations caused by the discharge of drill cuttings will be substantially below the levels required to cause an effect on fish or invertebrate larvae (i.e. predicted levels are well below a 96-hr exposure at 100 mg/L, or instantaneous 500 mg/L exposure) and minimal impact to larvae is expected from the discharge of drill cuttings. Jenkins and McKinnon (2006) reported that levels of suspended sediments greater than 500 mg/L are likely to produce a measurable impact upon larvae of most fish species, and that levels of 100 mg/L will affect the larvae of some species if exposed for periods greater than 96 hours. Jenkins and McKinnon (2006) further indicate that levels of 100 mg/L may affect the larvae of several marine invertebrate species, and that fish eggs and larvae are more vulnerable to suspended sediments than older life stages. High energy oceanographic processes at the well location will result rapid dilution and dispersion of surface discharges of drill cuttings and fluids, reducing the potential for toxic effects to fish larvae. Fish larvae are likely to be transient, therefore exposure to total suspended sediments will short-term and localised. Rapid dispersion of TSS and the transient nature of fish larvae reduces the likelihood of 96-hour exposure of fish larvae to drill cuttings and fluids which is required to illicit potential injury or mortality. The intermittent and brief exposure of adult mobile fish to in-water operational discharge plumes will prevent chronic exposure which leads to mortality. This assessment considers the risk of injury or mortality to plankton and fish from operational discharges. While the impact is conceivable and could occur from this activity, which is short term, it is considered **Unlikely (D)** and as such the overall risk level is **Low**. **Risk: Injury/mortality to Marine Fauna - Mobile Fish, Marine Reptiles and Marine Mammals**	Level 1	A		Unlikely (D)	Low	

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		The intermittent and brief exposure of mobile fish, marine reptiles and marine mammals to in-water drilling discharges will prevent chronic exposure that could begin to manifest in sublethal physiological and lethal impacts. Therefore, these outcomes are not credible given the nature and scale of the activity. No BIAs or protected habitats for fish species were identified within the operational area. however, a variety of fish species, including commercial species may be present. Impacts are not expected to fish species due to the low toxicity of water-based fluids and rapid dilution. The operational area does not overlap recognised BIAs for marine turtles and therefore low numbers are expected in the area. Marine turtles with the potential to be exposed to drilling discharge plumes in the operational area are therefore limited to transient individuals. Brief exposure to the plumes may result in minor behavioural changes. Although, they are unlikely to lead to sub-lethal injury given the absence of habitats that encourage long-term presence of marine turtles in the operational area (Johnson 2018). A foraging BIA for the pygmy blue whale has been identified within operational area. Pygmy blue whales are expected to aggregate near the operational area and surrounds to feed from November and July (DoE 2015a). Cetaceans are expected to be less sensitive to potential impacts associated with turbidity, compared to fish larvae (described above). Given this adaptation to temporary increases in turbidity, plumes generated by drilling discharges are not expected to have a discernible effect foraging behaviours or movement patterns of individuals, nor at a population level. Therefore, the evaluation of potential impacts to fish larvae provides a conservative evaluation of the level of potential impacts to marine fauna for this discharge. The migration BIA of the southern right whale overlaps with the operational area. Although, marine discharges from a MODU or equivalent are not identified as a threat to the recovery of the pygmy blue whale (DoE 2015a), or to the recovery of the southern right whale (DCCEEW 2024b), marine pollution by acute and chronic chemical discharge is identified in both plans as a threat that has minor consequences to the population by only affecting individuals (DoE 2015a; DCCEEW 2024b). However, due to the low toxicity of planned discharges and their rapid dilution as a result of oceanic conditions, along with the transient nature of these species within the operational area, impacts are not predicted to occur. Marine fauna exposed to field cuttings in sediments in laboratory or field studies indicated that species did not bioaccumulate significant quantities of metals (Hartley et al. 2003). There is some evidence of limited bioavailability of a few metals, such as lead and zinc, which are present in cuttings piles or additives in drilling lubricants and fluids. However, there is uncertainty whether metal bioaccumulation in marine fauna from cuttings piles is sufficient to cause harmful effects in marine fauna living on or near cuttings piles (OSPAR 2019). Neff (2010) concludes that, due to a lack of overall toxicity and low bioaccumulation potential of drilling fluids, the effects of drilling discharges are highly localised and are not expected to spread through the food web. It is expected that any potential minor behavioural impacts from planned operational discharges would be temporary and localised given the transient nature of marine fauna within the operational area. Therefore, the impact is considered **Unlikely (D)** and as such the overall risk level is **Low**. Any impacts to megafauna would be negligible.						
Planned Discharges – Cement: • Drilling • Well Abandonment (Contingency)	Change in water quality Change in sediment quality	Drilling activities will generate excess cement slurry and washings which are typically released to the marine environment as a result. One top-hole will be drilled under the Activity with well construction activities expected to occur for up to 60 days. In the unlikely event that the well will not be utilised for future evaluation, appraisal or development, well abandonment activities are expected to occur for ~30 days <u>Planned Discharges – Seabed and Surface</u> Planned cement discharges include releases of: • ~60 m^3 discharged at the seabed, including excess volumes of cement and the spacer displacement to the seabed. • ~50 m^3 discharged at the surface, including discharge volumes on testing. • ~8 m^3 discharged at the surface if P&A activities are required (contingent activity). <u>Potential Discharges - Unused Bulk Material Disposal</u>	Level 1	A	CM09: Offshore equipment (solids equipment) CM10: Amplitude Energy Offshore Chemical Assessment Procedure CM11: Titleholder Collaboration	N/A	N/A	Acceptable based on: • Impacts well understood. • Consequence level is Level 1, therefore no potential to affect biological diversity and ecological integrity. • Risk level to receptors a result of the change in ambient conditions is low.

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		Unused cement bulk discharges produced following the completion of well construction activities will be managed in accordance with Figure 12-9. It is anticipated that in the worst-case scenario a volume of ~50 m^3 of bulk cement (accounting for possible leftover contingency) would be mixed with water and discharged as a slurry overboard. Although this aspect is assessed as having a 'low order' impact; Amplitude Energy has reviewed and assessed additional controls to ensure that impacts are managed to ALARP. Table 6-3 identifies and assesses additional controls. **Impact: Change in Water Quality and Sediment Quality** Discharge of cement at the surface can cause increased turbidity in the water column and result in a temporary change in surface water quality. However, cement particles are expected to disperse under the action of metocean conditions and eventually settle out of the water column. The initial discharge will generate a downwards plume, increasing the initial mixing of the receiving waters. Modelling of surface cement discharges of approximately 78 m^3 over one hour, conducted for BP (2013), resulted in a suspended solid concentration between 0.005-0.05 mg/m^3 within the extent of the plume (~150 m horizontal and 10 m vertical) over 2 hours. Four hours post-discharge, concentrations were <0.005 mg/m^3. The volume modelled is greater than the maximum surface discharge volume predicted for the Activity, therefore it is predicted that the concentration of suspended sediments would be lower. Cement discharged at the seabed is not expected to disperse as it is designed to set in a marine environment and will therefore set in-situ. BP (2013) modelled a 200 t (~83 m^3) cement discharge at the seabed and found changes to the benthic environment were limited to 10 m. Cement is inert and is listed as a substance that is considered PLONOR (OSPAR 2021). Given the inert nature, toxic impacts to benthic habitats and ecological receptors such as plankton, fish, marine mammals and turtles are not anticipated. Water and sediment quality within the operational area is expected to be representative of the quality found in the Otway Basin waters. With consideration of the high energy marine environment and given the localised and temporary nature of the change in water and sediment quality, the consequence of any impacts from cement discharges are assessed as **Level 1**.			CM12: Inventory Management CM13: Offshore Operational Procedures (Drilling Discharges Management) CM15: Campaign Risk Review See Table 6-3 for an assessment of additional controls.			• Activity will not result in serious or irreversible damage. • Good practice controls defined and implemented. • Legislative and other requirements have been identified and are provided for. Minamata Convention Activity will not impact the recovery of: – Blue whale as per the Blue Whale Conservation Management Plan 2015 – 2025 (DoE, 2015) – Southern right whale as per the National Recovery Plan for the Southern Right Whale (DCCEEW, 2024b) – Marine turtles as per the Recovery Plan for Marine Turtles in Australia, 2017 – 2027 (CoA, 2017). • Amplitude Energy MS Standards and Processes have been identified. • No claims or objections raised during consultation. Impacts are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2).
	Change in benthic habitat	**Impact: Change in Benthic Habitat** Changes to the physical environment as a result of planned discharges of cement could result in a change to benthic assemblages within the operational area. The volume of cement that will be discharged at the seabed during the Activity has the potential to smother and permanently alter the benthic substrate. Cement overspill on the seabed is expected to change seabed habitat within 10-50 m of the well. Benthic assemblages in the operational area are characteristic of the shelf rocky reef and hard substrate KEF that is well represented in the wider Bass Strait region (Table 4-3). Activities occurring within the operational area are likely to result in seabed disturbance to the KEF and impact some of the associated values, such as diversity and productivity of the hard substrate which are often colonised by sponges, sessile invertebrates, soft corals. Results from a 2020 seabed survey adjacent to the operational area observed hard ground and patchy epifauna, consistent with the description of the KEF, however no reef-type structures of high relief were observed (Fugro, 2020; 2020a). The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location. The operational area does not overlap AMPs, and no ecological communities listed as threatened under the EPBC Act have been observed. Observations within the existing Otway offshore field have shown high levels of colonisation of disturbed seabed and equipment since it was installed in mid-late 2000's (Fugro 2020; 2020a). Therefore, the risk of change in habitat from cement overspill are not anticipated to significantly alter the overall character of the seabed, or its ecological amenity, and are expected to be limited to within the near vicinity of the well. Any decrease in the abundance and biomass of epifauna would be highly localised and recoverable, with no threat to EPBC Act listed threatened benthic fauna or the long-term viability of the ecosystem. Given the localised and recoverable nature of change in benthic habitat, the consequence is assessed as **Level 1**.	Level 1	A		NA	Low	

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
	Injury / mortality to marine fauna	**Risk: Injury/mortality - Plankton and Fish (including Eggs and Larvae)** As stated above, cement is listed as a substance that is PLONOR (OSPAR 2021), and together with water forms the majority of cement slurry. Other products are used to adjust the properties of the cement slurry; to ensure the cement sets as intended, accounting for the temperatures, pressures and contents of the well. Surface cement slurry discharges are expected to result in a highly localised and temporary suspended solid plume, preventing long-term exposure to plankton and fish resulting in injury or mortality. The high energy conditions in the operational area will result in a rapid dispersion of the drilling discharges plume, and any concentrations of suspended solid concentrations of cement would become further diluted over time. Early life stages of fish (eggs, larvae) and plankton would be most susceptible to exposure from cement slurry and wash water as they are less mobile and therefore can be more exposed to the plume at the discharge point. Although plankton may be sensitive to aspects of marine discharges, this is typically for prolonged exposure. Considering the naturally high mortality of plankton and the rapid replacement of the species (Richardson et al. 2017), any impacts from short term exposure to suspended cement particles are not expected to have lethal effects to plankton that are ecologically significant. Jenkins and McKinnon (2006) reported that levels of suspended sediments greater than 500 mg/L are likely to produce a measurable impact upon larvae of most fish species and levels of 100 mg/L where exposure occurs for greater than 96 hours may also affect the larvae of some species. Jenkins and McKinnon (2006) further indicate that levels of 100 mg/L may affect the larvae of several marine invertebrate species. It is understood that the egg and larval stages are more vulnerable to suspended particles than other life stages. Modelling of surface cement discharges of approximately 78 m^3, conducted by BP (2013), detailed that the particulate concentrations within the extent of the plume (approximately 150 m horizontal and 10 m vertical) were in the 5-50 mg/L range over two hours from the start of discharge. Four hours after the start of the discharge, the modelling indicates that the plume will have completely dispersed to particulate concentrations of less than 5 mg/L. The volume modelled is slightly greater than the maximum surface discharge volume predicted for the Activity activities (60 m^3). Thus, impacts to fish (including eggs and larvae) are not predicted. Within the operational area, planktonic communities will be typical of the offshore environment in the region. Mortality rates for plankton are naturally high with distribution often patchy and linked to localised and seasonal productivity that produces sporadic bursts in phytoplankton and zooplankton populations (CoA 2015c). Considering the high energy marine environment and naturally high variability in presence of plankton and fish eggs and larvae in the Otway Basin; any impacts will be localised and temporary and have been assessed as **Level 1**. **Risk: Injury/mortality - Mobile Fish, Marine Reptiles and Marine Mammals** The intermittent and brief exposure of mobile fish, marine reptiles and marine mammals to in-water cement discharges will prevent chronic exposure that could begin to manifest in sublethal physiological and lethal impacts. Therefore, these outcomes are not credible given the nature and scale of the activity. No BIAs or protected habitats for fish species were identified within the operational area. However, a variety of fish species, including commercial species may be present. Impacts are not expected to fish species due to the low toxicity of the suspended cement particles and rapid dilution. A foraging BIA for the pygmy blue whale has been identified within the operational area. Marine discharges from a MODU or equivalent are not identified as a threat to the recovery of pygmy blue whales in the Conservation Management Plan for the Blue Whale (DoE 2015a). A migration BIA of the southern right whale overlaps with the operational area. Marine discharges from a MODU or equivalent are not identified as a threat to recovery in the National Recovery Plan for the Southern Right Whale (DCCEEW 2024b). The operational area does not overlap recognised BIAs for marine turtles and therefore low numbers are expected in the area. Marine turtles with the potential to be exposed to cement discharges in the operational area are therefore limited to transient individuals. Minor behavioural changes may result from brief exposure to the plumes. Although, they are unlikely to lead to sub-lethal injury given the absence of habitats that encourage long-term presence of marine turtles in the operational area (Johnson 2018).	Level 1	A		Unlikely (D)	Low	• Consequence is the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no additional objections and claims were raised against this aspect.

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		It is expected that any potential minor behavioural impacts from planned cement discharges would be temporary and localised given the transient nature of marine fauna within the operational area. Therefore, the impact has been assessed as Level 1 and **Unlikely (D)** and, as such, the overall risk level is **Low**. Any impacts to megafauna would be negligible.						
Planned Discharges – Other: • BOP Installation/ Testing • Well Integrity Monitoring • ROV Operations • Well Shut-in	Change in water quality	Discharges to the subsea environment, near the seabed will occur during BOP installation, testing, well integrity, ROV operations and well shut-in. Discharges will include: • ~2.5 m^3 of hydraulic control fluid and test fluid per function / pressure test (function tests are generally undertaken every 7 days with pressure tests occurring every 21 days (see Section 3.4.3.4)). • Minor volumes (~10 L) of hydraulic control fluids during well integrity testing activities. • Minor volumes (~50 L) of calcium wash (citric acid or equivalent) may be discharged if cleaning of the calcium deposits from the ROV interface to the SST is required. **Impact: Change in Water Quality** Diluted hydraulic control fluids in potable water are water-based, low toxicity and readily biodegradable. Neff (2005) indicates that within well-mixed ocean waters, consistent with the operational area, fluids will have diluted by over 100-fold within 10 m of the discharge point. Modelling undertaken by BP (2013) of discharge plumes associated with BOP function testing indicates that the maximum plume persistence was approximately 77 minutes, based on 51 m and 81 m dimensions. The smallest discharge (20 litres over 0.5 minutes) persisted to a dilution of 3,000-fold, ranging between 3 and 12 minutes, with maximum width and length of 5m and 7m respectively (BP 2013). Calcium wash (citric acid or equivalent such as sulfamic acid) are typical chemicals used to remove marine growth or calcium deposits. Discharge of these chemicals to the subsea environment may result in a localised and temporary reduction in water quality. However, due to the small volumes released, these discharges are anticipated to rapidly disperse into the water column and any changes to the water quality will be localised and short-term. All chemicals, including hydraulic fluids, are selected in accordance with the Amplitude Energy Offshore Chemical Procedure to ensure ecotoxicity profiles are of an acceptable level. Water quality within the operational area is expected to be representative of the quality found in the Otway Basin waters. Given the high energy marine environment, discharges during BOP installation and testing, ROV operations and well shut-in will dissipate rapidly and any change in water quality will be localised and temporary. Impacts are assessed as **Level 1**.	Level 1	A	CM09: Offshore equipment CM10: Amplitude Energy Offshore Chemical Assessment Procedure	N/A	N/A	Acceptable based on: • Impacts well understood. • Consequence level is Level 1, therefore no potential to affect biological diversity and ecological integrity. • Risk level to receptors as a result of the change in ambient conditions is low. • Activity will not result in serious or irreversible damage. • Good practice controls defined and implemented. • Legislative and other requirements have been identified and are provided for: Minamata Convention Activity will not impact the recovery of: – Blue whale as per the Blue Whale Conservation Management Plan 2015 – 2025 (DoE,2015) – Southern right whale as per the National Recovery Plan for the Southern Right Whale (DCCEEW 2024b) – Marine turtles as per the Recovery Plan for Marine Turtles in Australia, 2017 – 2027 (CoA 2017a). • Amplitude Energy MSS and Processes have been identified. • No claims or objections raised during consultation.
	Injury / mortality to marine fauna	**Risk: Injury/mortality - Plankton and Fish (including Eggs and Larvae)** Early life stages of fish (eggs, larvae) and other plankton would be most susceptible to toxic exposure from chemicals in the hydraulic fluid discharges, as they are less mobile and therefore can become entrained in a discharge. However, these fluids are typically soluble or miscible with water and dilute rapidly, limiting overall exposure time and the potential for toxic effects to manifest. As mentioned above, mortality rates for plankton are naturally high with distribution often patchy and linked to localised and seasonal productivity that produces sporadic bursts in phytoplankton and zooplankton populations (CoA 2015c). Plankton are known to accumulate rapidly and are generally not found to be sensitive to the impacts of contaminants within the water column (Hook et al. 2016). Planktonic communities within the operational area will be typical of the offshore marine environment in the region. Given the high energy marine environment, changes to water quality that may impact plankton will be localised to the discharge point with discharges subject to rapid dilution. The potential localised effects to plankton within the operational area are expected to be undetectable at a population level as they are known to have high levels of natural mortality and a rapid replacement rate (Richardson et al. 2017). As such, the impacts have been assessed as **Level 1**, with the event being considered **Remote (E)**. Therefore, the risk level has been determined as **Low.** **Risk: Injury/mortality - Mobile Fish, Marine Reptiles and Marine Mammals** Larger marine fauna are not expected to be impacted by exposure to chemicals in the hydraulic fluid discharges due to the low and localised levels of exposure which have the potential to occur. If contact does occur with any marine fauna, it will be short in duration due to small volumes released to the marine environment and the rapid dispersion of	Level 1	A		Remote (E)	Low	

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		the plume will preclude chronic exposure, sub-lethal impacts and mortality. As a result, mortality and/or injury from operational discharges is not a credible event. Any impacts to megafauna would be negligible.						Impacts are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence is the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no additional objections and claims were raised against this aspect.
Planned Discharges – Operational: • Vessel Operations • MODU Operations	Change in water quality	MODU and vessel operations will result in the routine operational discharges to surface waters. These include: • Sewage and grey water (approximately 144m^3/day). • Cooling water and brine (approximately 8,400m^3/day). • Deck drainage and bilge (approximately 1.5m^3/day). No putrescible waste (i.e., food waste) will be discharged as per AMSA's MARPOL requirements. Routine operational discharges such as cooling water, deck drainage, and bilge will be treated onboard prior to discharge, as per IMO regulations. Volumes of routine operational discharges are often dictated by the number of people on board the vessel. The following volumes are expected for the Activity. **Impact: Change in Water Quality** Routine MODU and vessel discharges will result in localised changes to the water quality within the vicinity of the discharge point, and may result in increased temperature, chemicals, nutrients or salinity within the water column. Contaminants in operational discharges are expected to be exposed to prevailing currents which will disperse and dilute the plume in receiving waters or be consumed by microorganisms (bacteria) (NERA 2017; Shell 2020). Changes to water quality from contaminants in operational discharges is expected to be short-term and localised to waters surrounding the discharge point as demonstrated by the following studies: • Modelling by Shell (2009) found that upon discharge, hydrocarbons and other chemical concentrations are rapidly diluted within less than 100 m of the discharge point, over a relatively short period of time. • Intermittently elevated nutrient levels from sewage, putrescible waste, and grey water discharges, which will either dilute in the receiving waters, settle out of the water column, chemically break down or be consumed by microorganisms (bacteria) (NERA 2017). • Monitoring of a 10 m^3 of discharged sewage found in-water concentrations was reduced to 1% of its initial concentration within 50 m of the discharge point (Woodside Energy 2014).	Level 1	A	CM03: Marine Assurance Process CM08: Planned Maintenance System CM10: Amplitude Energy Offshore Chemical Assessment Procedure (project chemicals).	N/A	N/A	Broadly Acceptable, based on: • Impacts well understood. • Consequence level is Level 1, therefore no potential to affect biological diversity and ecological integrity. • Risk level to receptors a result of the change in ambient conditions is low. • Activity will not result in serious or irreversible damage. • Good practice controls defined and implemented. • Legislative and other requirements have been identified and provided for: Activity will not impact on the values and functions of the Bonney Upwelling KEF. Activity will not impact the recovery of: – Blue whale as per the Blue Whale

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		• Friligos (1985) observed sewage discharge in deep ocean waters and found no appreciable differences in the inorganic nutrient levels between the outfall area and background concentrations, suggesting rapid uptake of nutrients and/or rapid dispersion in the surrounding waters. • Modelling of continuous wastewater discharges observed that the temperature of discharged water was <1°C above ambient within 100 m (horizontally) of the discharge point, and 10 m vertically (Woodside Energy 2014). Biocides and chemical contaminants in operational discharges are selected in accordance with the Amplitude Energy Offshore Chemical Procedure to ensure ecotoxicity profiles are of an acceptable level. Further, these discharges are subject to IMO regulations so most will undergo treatment prior to discharge. The open ocean environment in the operational area will result in the rapid mixing and dilution of vessel discharges Therefore, in combination with the low volume of discharges, it is expected that any planned operational discharges will be short-term and localised. The consequence of impacts to water quality will be **Level 1**.						Conservation Management Plan 2015 – 2025 (DoE 2015a) – Southern right whale as per the National Recovery Plan for the Southern Right Whale (DCCEEW 2024b) – Marine turtles as per the Recovery Plan for Marine Turtles in Australia, 2017 – 2027 (CoA 2017a). • Amplitude Energy MS Standards and Processes have been identified. • No claims or objections raised during consultation. Impacts are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence is the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no additional objections and claims were raised against this aspect.
	Injury / mortality to marine fauna	**Risk: Injury / Mortality to Marine Fauna - Plankton** Contaminants in operational discharges from MODU and vessel operations have the potential to result in injury/mortality to plankton. Plankton are typically considered more vulnerable to the impacts of routine vessel discharges compared to mobile species due to their inability to move away from the discharge point. As discussed above, mortality rates for plankton are naturally high with distribution often patchy and linked to localised and seasonal productivity that produces sporadic bursts in phytoplankton and zooplankton populations (CoA 2015c). In addition, plankton are known to accumulate rapidly and are generally not found to be sensitive to the impacts of contaminants within the water column (Hook et al. 2016). Therefore, considering the naturally high mortality of plankton and the rapid replacement of the species (Richardson et al. 2017), any impacts from short term exposure to low toxicity discharges are not expected to cause measurable levels of injury or mortality to plankton and will not result in a change in the viability of the population or ecosystem. Therefore, impacts to plankton have been assessed as **Level 1**, with a likelihood of **Remote (E)** assigned. The risk to plankton from planned operational discharges have been evaluated as **Low**. **Risk: Injury / Mortality to Marine Fauna - Mobile Fish, Marine Reptiles and Marine Mammals** Marine fauna within the operational area is likely to be transient. The intermittent and brief exposure of marine fauna to in-water operational discharges will preclude chronic exposure which leads to mortality. As a result, mortality from operational discharges is not a credible event. No BIAs or protected habitats for fish species were identified within the operational area. However, a variety of fish species, including commercial species may be present. Fish respond to elevated turbidity levels by actively avoiding the plume, which prevents chronic exposure that may lead to sub-lethal impacts relating to minor physiological stress. Observations from numerous studies have identified that adult fish can tolerate relatively high levels of turbidity and TSS for short periods (Johnson 2018). Therefore, fish in the operational area are not expected to stay within the discharge plume for a period of time that would result in sub-lethal injury to occur. A foraging BIA for the pygmy blue whale has been identified within the operational area. Marine discharges from a MODU or equivalent are not identified as a threat to the recovery of pygmy blue whales in the Conservation Management Plan for the Blue Whale (DoE 2015a). The south-east marine region, in addition to the north marine region, has the lowest water clarity and least seasonality of the six marine regions around the coast of Australia (Richardson et al. 2020). As a result, marine mammals that regularly feed here are adapted to high natural variability of in-water turbidity. Given this adaptation to temporary increases in turbidity, plumes generated by operational discharges are not expected to prevent marine mammals from returning to the operational area to feed after discharges have been completed (Johnson 2018). A migration BIA of the southern right whale overlaps with the operational area. Marine discharges from a MODU or equivalent are not identified as a threat to recovery in the National Recovery Plan for the Southern Right Whale (DCCEEW 2024b). Since marine mammals are adapted to temporary sediment disturbances because of their oceanic existence and exposure to large storms, disturbances that generate TSS should not prevent species from returning to the area after the disturbance has passed (Tillin et al. 2011).	Level 1	A		Remote (E)	Low	

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		The operational area does not overlap recognised BIAs for marine turtles and therefore low numbers are expected in the area. Marine turtles with the potential to be exposed to operational discharge plumes in the operational area are therefore limited to transient individuals. Minor behavioural changes may result from brief exposure to the plumes. Although, they are unlikely to lead to sub-lethal injury given the absence of habitats that encourage long-term presence of marine turtles in the operational area (Johnson 2018). It is expected that any potential minor physiological impacts from planned operational discharges to plankton, fish, marine reptiles, and marine mammals would be temporary and localised given the transient nature of marine fauna. Therefore, any impacts to megafauna would be negligible, and have been assessed as **Level 1** with a likelihood of **Remote (E)** assigned. The risk to marine fauna has been determined as **Low.**						

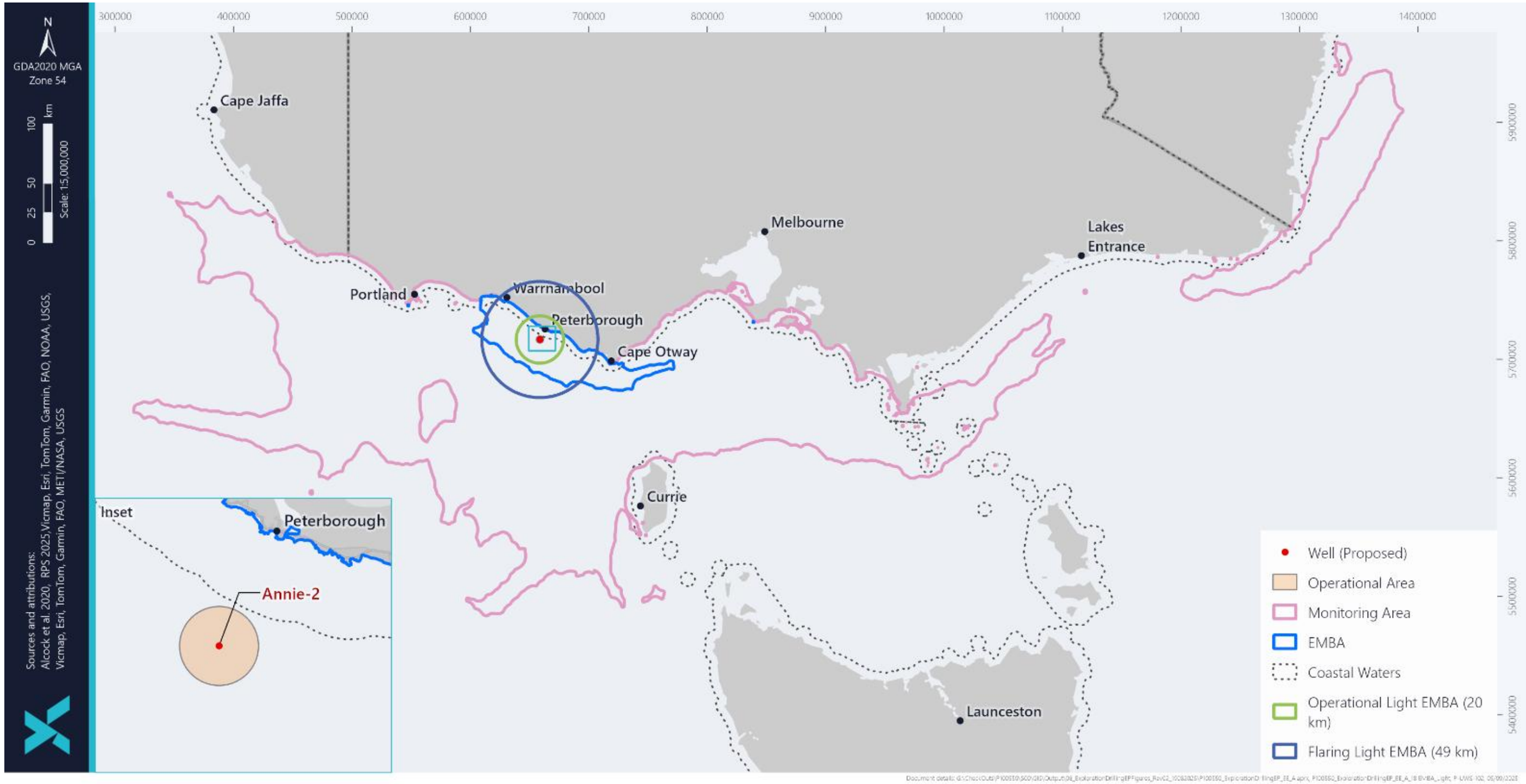


Figure 6-3: Operational Light EMBA and Flaring Light EMBA Within the Monitoring Area

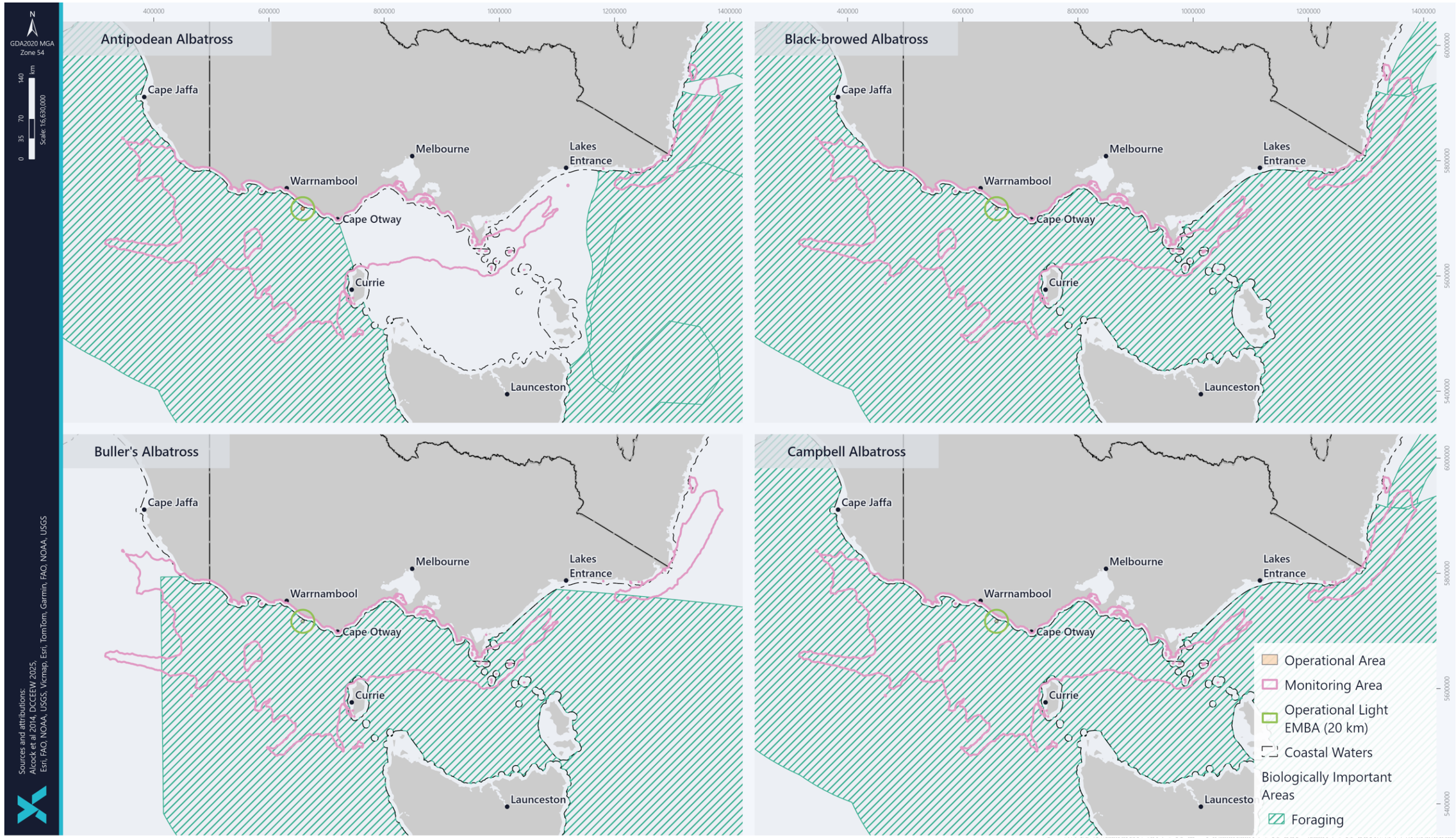


Figure 6-4: Antipodean Albatross, Black-browed Albatross, Buller's Albatross, and Campbell Albatross BIAs overlapping the Operational Light EMBA Within the Monitoring Area

Figure 6-5: Shy Albatross, Wandering Albatross, and Indian, Yellow-nosed Albatross BIAs overlapping the Operational Light EMBA Within the Monitoring Area

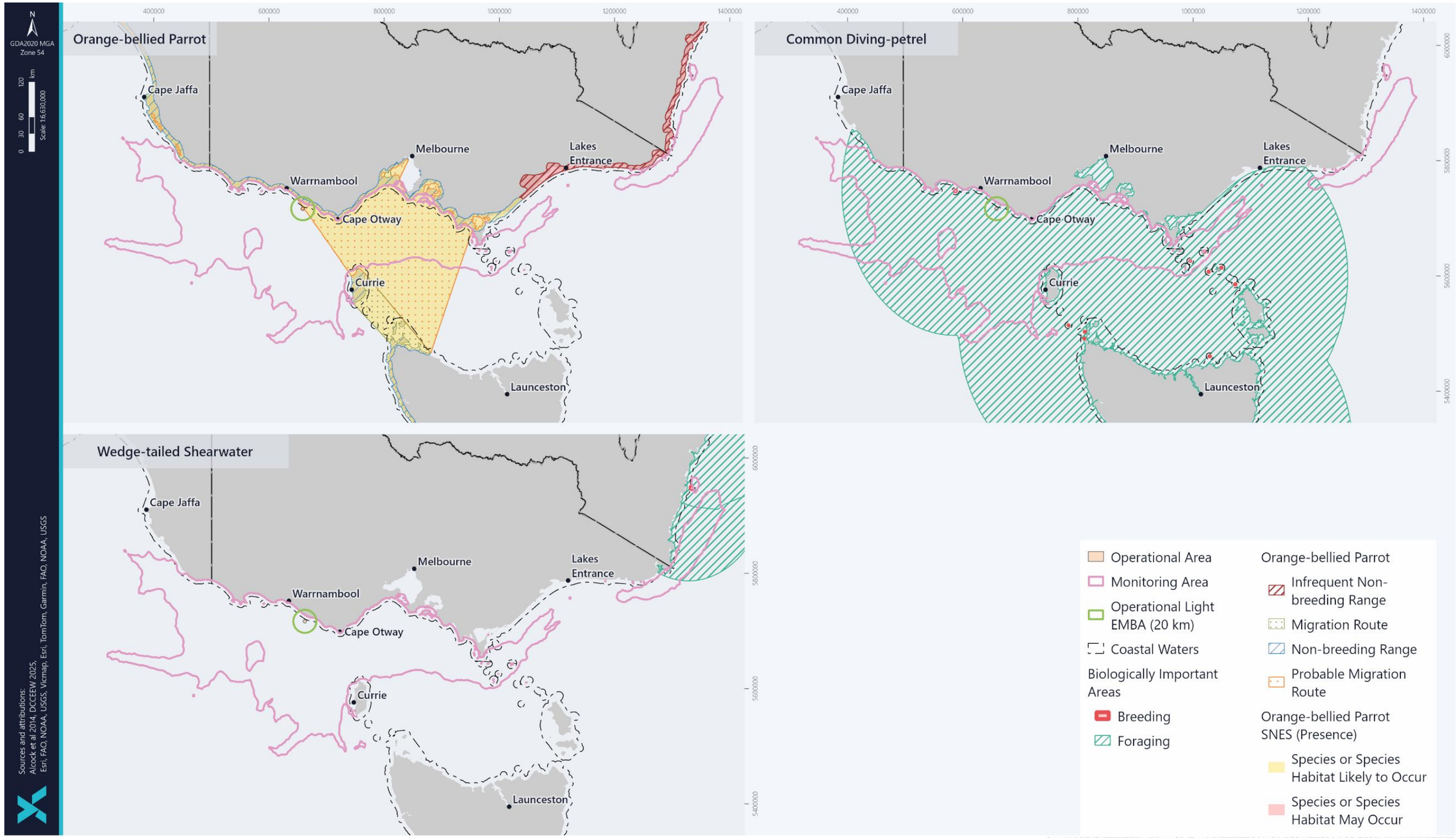


Figure 6-6: Orange-bellied Parrot, Common Diving-petrel, and Wedge-tailed Shearwater BIAs overlapping the Operational Light EMBA Within the Monitoring Area

Table 6-3: Additional Control Measures Considered to Manage Drilling and Cementing Discharges

Additional Control Measures Considered	Benefit	Sacrifice / Risk	Conclusion (Accept / Reject)
No Discharge of Unused Bulks to Sea	Restricting overboard discharges would result in a reduction of the overall volume of discharge to sea, reducing potential (low level) environmental impacts. However, with controls in place that limit the mercury concentrations in stock barite in combination with the known low solubility of barite in seawater, the implementation of "no discharge of unused bulks to sea" is considered to be of limited environmental benefit. Bulk materials (cement, barite, bentonite) are classified as PLONOR in the offshore environment. OSPAR Commission 2024: '*The (PLONOR) list at Appendix 1 contains substances whose use and discharge offshore are subject to expert judgement by the competent national authority of Contracting Parties. These (PLONOR) substances do not normally need to be strongly regulated as, from assessment of their intrinsic properties, the OSPAR Commission considers that they pose little or no risk to the environment.*' The content of mercury within bulks is <1 mg / kg, which is below the threshold for fill materials onshore, and below GV-high ANZG. The content of Cadmium within bulks <3 mg / kg, which is below the threshold for fill materials onshore, and below GV-high ANZG. Noting the bulks would not be placed as 'fill' but would dissipate through the water column if discharged. Assuming a nominal 100m^3 bulks released and settles to seabed entirely within 500m radius of the MODU then Cd and Hg concentrations would be well below ANZG DGVs. In accordance with Article 9 of the Minamata Convention, the best available techniques and best environmental practices shall be utilised to control releases of mercury from relevant sources, where by "best available techniques" means those techniques that are the most effective to prevent and, where that is not practicable, to reduce releases of mercury to water and the impact of such emissions and releases on the environment as a whole, taking into account economic and technical considerations. In addition, "best environmental practices" means the application of the most appropriate combination of environmental control measures and strategies. Amplitude Energy is undertaking this by using the most appropriate combination of control measures including inventory control to minimise the amount of dry bulk products remaining at the end of the Activity, quality control to minimise the amount of mercury in barite and transferring to subsequent operators for use (where possible). Amplitude Energy have developed an unused bulks management process which is detailed in Figure 12-9. At the end of the drilling campaign, any unused bulks, including barite, bentonite and cement will be left onboard / transferred to the next operator for use. Where this is not possible, Amplitude Energy will have unused bulks transferred to another MODU or if practicable, returned to shore. Discharge to sea (as a slurry) will only occur when there are no other safe, practicable options.	Additional time and cost associated with this option. Estimated 1-day + critical path offshore operations at ~$2M, with increased risk of trouble shooting time required as it is a non-standard operation. There would be additional, potentially significant onshore disposal costs, and use of limited onshore disposal capacity for materials that are PLONOR in the marine environment. Options to re-use bulk materials are expected to be limited once brought onshore as the properties of bulk materials are affected by the transfer process, changes in temperature, pressure and moisture content. There is increased risk of cement damaging equipment and affecting operations as cement actively absorbs moisture from the atmosphere and will ultimately harden with repeated exposure. This process is accelerated in the moisture rich offshore environment. To minimise the risk of this cement is sent offshore in batch quantities, defined by the well program requirements, and held within specialised bulk tanks within the support vessel and then the MODU. Excess volume is maintained to provide for immediate response to unplanned events which may require increased use of bulk materials for the well activity. Cement held offshore for an extended period and returned to shore is regarded as a contaminant, and vessel storage tanks are required to be cleaned prior to new cement being added to those tanks. This is a complex process requiring confined space entry procedures and removes a vessel from service for the period of time in which the tanks take to be cleaned. In the event the cement has absorbed too much water from the atmosphere and the transfer processes, cement may set in place in. The costs and additional risks of implementing this system are considered to outweigh the minimal environmental benefit gained.	Partially accept (covered within CM12: Inventory Management)
Quality Control Limits for Barite	Controls the risk of seabed contamination, ensuring heavy metal concentrations are not above safe limits.	Minor costs associated with selection sourcing of suitable barite and verification of heavy metal levels.	Partially accept (covered within C13: Inventory Management)
Industry Collaboration for Bulks Management	Collaboration in industry efforts to establish an aligned position on the management of unused bulk products, which includes an assessment of feasible onshore disposal solutions, may help to identify feasible improvements to the	Minor administrative costs and time associated.	Accept (covered within CM11: Titleholder Collaboration)

Additional Control Measures Considered	Benefit	Sacrifice / Risk	Conclusion (Accept / Reject)
	management of unused bulk products and eliminate the low-level risks associated with offshore discharge.		
Riserless mud Recovery (RMR) System	A RMR system recirculates drill cuttings and fluids from the top-hole of the well, eliminating discharge to the seabed (when applied in conjunction with onshore disposal), therefore eliminating low level potential impacts.	The top-hole section of the well will be drilled with seawater and pre-hydrated gel sweeps which are primarily PLONOR materials, and thus limited benefit of recovering to surface. A RMR system requires additional equipment on the seabed, increasing the direct Activity footprint from temporary equipment deployed to the seabed. Additional systems require more personnel (specialist equipment representatives) to operate it, putting an additional strain on limited bed space on the MODU. The system would require additional time to deploy and would be a critical path item. Estimated 1-2 days of time at cost of $2 MM - $4 MM to deploy and recover, plus additional costs for rental, integration engineering and operation expected to be $1 MM+. The costs and additional risks of implementing this system are considered to outweigh the minimal environmental benefit gained.	Reject
Additional Solids Control Equipment	Additional equipment such as thermal desorption and thermomechanical cleaning have been used in other regions such as the North-east Atlantic, to reduce the volume of oil on cuttings when synthetic based drill fluids are used thereby reducing the environmental impact.	Water-based drilling fluids are to be used for the Activity activities and therefore this technology is not applicable.	Reject
Extended Cuttings Outlet	Drill cuttings outlet is submerged further below the water line and therefore released deeper into the water column, potentially reducing the spatial extent of cuttings dispersion.	There is significant cost associated with engineering, fabricating and installing a submerged chute and managing the re-injection process resulting in increased operational and HSE risks, with the added potential to cause delays. Further, a submerged chute would result in an increased concentration of cuttings deposition in smaller area which may further inhibit infauna recovery at the seabed. In the Otway offshore environment there would be limited effectiveness and limited benefit of this option, noting that the offshore Otway is a highly dispersive environment with generally hard seabed and mobile sands. As such, cuttings will naturally be dispersed whether deposited close to the seabed, or closer to sea surface. Allowing for increased dispersion also reduces low level risks associated with smothering and increased metal content. Therefore, the costs and additional risks of implementing this option are considered to outweigh the minimal environmental benefit gained.	Reject
Slim Hole Well Design	A slim hole well design would result in a small, direct, reduction of the volumes of drilling cuttings and fluids discharged to sea.	Implementation of a slim hole well design would prevent Amplitude Energy from delivering the required well objectives. The current well design has already been optimised to minimise the size of hole drilled while still being able to reach the targets and meet evaluation objectives safely.	Reject
Onshore Disposal of drilling fluid and cement volumes	Eliminates the discharge of drilling wastes to sea, therefore reducing (low level) impacts to water quality and benthic communities.	There is significant cost associated with engineering, fabricating and installing a submerged chute and managing the re-injection process resulting in increased operational and HSE risks, with the added potential to cause delays. Further, would result in an increased concentration of cuttings deposition in smaller area and therefore may further inhibit infauna recovery at the seabed. In the Otway offshore environment there would be limited effectiveness and limited benefit, noting offshore Otway is a highly dispersive environment with generally hard seabed and mobile sands, such that cuttings will naturally be dispersed whether deposited close to the seabed, or closer to sea surface. Allowing for increased dispersion also reduces low level risks associated with smothering and increased metal content.	Reject

Additional Control Measures Considered	Benefit	Sacrifice / Risk	Conclusion (Accept / Reject)
		The costs and additional risks of implementing this option are considered to outweigh the environmental benefit gained.	
Active Management of Bulks: • Actively look to minimise residual bulks through aligning bulk transfer quantities with program requirements. • For P&A activities (contingency) design cement plugs in a way that minimises residual cement remaining on the MODU.	Active management of bulks is used to minimise leftover stocks offshore, reducing overall quantities of material that may need to be discharged to sea, and reducing the extent and severity of associated low-level impacts.	Moderate costs and time associated with researching, designing, organising and contracting services to execute options to manage bulks.	Partially accept (covered within CM12: Inventory Management)

6.2.2 Unplanned Aspects

Table 6-4: Lower Order Unplanned Impact and Risk Evaluation

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
Planned Discharges								
Physical Presence – Interaction with Marine Fauna: • MODU operations • Vessel operations • Helicopter operations.	Injury / mortality to marine fauna	**Risk : Injury/mortality to marine fauna** Unplanned interactions with marine fauna could occur due to MODU and vessel movements within the operational area, during support activities. These interactions have the potential to cause injury/mortality to marine fauna. As per Section 3.4.5, the maximum duration of these activities include: • Site surveys: ~7 days • MODU operations: ~60 days • Vessel operations (support): ~60 days • Helicopter operations: approximately 5-8 times per week. The receptors that may be impacted include: • Marine Reptiles • Marine Mammals • Fish and Sharks • Avifauna. **Marine Reptiles, Fish and Marine Mammals:** Marine turtles transiting within the operational area are at risk from vessel strike when they periodically return to the surface to breath and rest. Marine turtles spend as little as 3-6 percent of their time at the surface with routine dives that last between 15 to 20 minutes to an hour depending on environmental conditions (NOAA 2021). The Recovery Plan for Marine Turtles in Australia 2017-2027 identifies vessel disturbance as a threat to the species, although the threat is only focused on shallow coastal foraging habitats and internesting areas (CoA 2017a). There are 3 species of marine turtles that may occur within the operational area, the green turtle, loggerhead, and leatherback turtle; however, this occurrence is expected to only be of a transient nature due to the absence of suitable coastal habitat in the south-east marine region. No BIAs or habitat critical to the survival of these marine turtles occurs within the operational area or wider south-east marine region. The risk of collisions between turtles and vessels increases with vessel speed (Hazel et al. 2007). For the majority of time vessels within the operational area will be stationary or moving slowly between operational areas, reducing the potential severity and likelihood of collision.	Level 2	A	CM13: Offshore Operational Procedures CM17: Amplitude Energy Offshore Victoria Whale Disturbance Risk Management Procedure	Unlikely (D)	Low	Broadly Acceptable, based on: • Impacts well understood. • Residual risk (severity) is Low. • Consequence level is Level 2, therefore no potential to affect biological diversity and ecological integrity. • Activity will not result in serious or irreversible damage. • Good practice controls defined and implemented. • Legislative and other requirements have been identified and met, and guidelines considered: – EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans – National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna (CoA, 2017b) • Activity will not impact the recovery of:

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		Slow moving megafauna that are within the surface waters and breach often are most at risk from the interaction with vessels within the operational area. Marine mammals' surface to breathe periodically and may spend a lot of their time at or near the water's surface. This behaviour makes marine mammals, particularly large mammals such as baleen whales vulnerable to vessel strike. The International Whaling Commission (IWC) (2020) reported around 900 cases of vessel strike with cetaceans globally, inclusive of all historic records; 35 of those interactions were reported within Australian jurisdictions. Cetaceans are naturally inquisitive marine species that are often observed from offshore vessels and facilities, however, the behaviour of whales in response to the approach of a vessel can vary. Some species are curious and will approach ships that have stopped or are slow moving, although they generally do not approach, and sometimes avoid, faster-moving ships (Richardson et al. 1995). Collisions between larger vessels with reduced manoeuvrability and large, slow-moving cetaceans occur more frequently where vessel traffic is high and cetacean habitat occurs (WDCS 2006). Laist et al. (2001) identified that large vessels with reduced manoeuvrability moving in excess of 10 knots may cause fatal or severe injuries to cetaceans, with the most severe injuries caused by vessels such as tanker travelling faster than 14 knots. Vessels used to support these activities do not have the same limitations on manoeuvrability and would typically travel at economy speeds (or lower) when conducting activities within the scope of this EP, inside of the operational area. Large, slow-moving fish and shark species that bask or feed at the surface are the most vulnerable to vessel collisions. Vessels moving through the operational area have the potential to collide with large fish species that may occur within the operational area. Listed threatened and migratory marine reptiles, fish and marine mammals' presence within the operational area includes: • Four threatened marine mammal species; southern right whale (Endangered), blue whale (Endangered), sei whale (Vulnerable) and fin whale (Vulnerable). • Eight migratory marine mammals; killer whale, dusky dolphin, southern right whale, blue whale, sei whale, fin whale, pygmy right whale and humpback whale. • Two marine mammals with BIAs; pygmy blue whale (Distribution and Foraging) and the southern right whale (Migration). • Three migratory marine species: White Shark, Grey Nurse Shark, Porbeagle Shark. • Three conservational dependent species: Blue Warehou, Eastern School Shark, Australasian Grayling. • Three migratory and threatened marine reptiles, leatherback turtle, loggerhead turtle and green turtle. No BIA's have been identified within the operational area for marine reptiles. The operational area has no threatened species presence of BIAs for pinnipeds, dugongs or dolphins, however Australian fur-seals and long-nosed fur seals may occur within the area. The operational area has no threatened species presence of BIA for fish and sharks. **Avifauna:** Helicopters that are arriving to, or departing from, the MODU or installation vessel have the potential to collide with avifauna and potentially result in injury / mortality. It is recognised that, historically, seabird have been known to aggregate around oil and gas platforms due to night lighting, flaring, food concentrations and other visual cues, increasing the risk of a possible interaction (Wiese et al. 2001). However, considering the short duration of the activity it is considered unlikely that individuals would habituate to the presence of the MODU. The operational area does not host a large number of diversity of bird species, mainly due to its offshore location and lack of features suitable for bird roosting and nesting. The absence of these features decreases the chance of high numbers of bird at potentially vulnerable stages within the operational area therefore reducing the chances of a bird strike event. It is expected that any avifauna within the operational area would be foraging, rafting or travelling through. Given the large distance typically covered by marine bird						– Marine turtles as per the Recovery Plan for Marine Turtles in Australia (CoA, 2017a) – Blue whale per the CMP for the Blue Whale, 2015-2025 (DoE, 2015) – Southern right whale as per the National Recovery Plan for the Southern Right Whale (DCCEEW, 2024b) – Sei whale as per Conservation Advice for the Sei Whale (TSSC 2015a) – Fin whale as per Conservation Advice for the Fin Whale (TSSC 2015b) • Amplitude Energy MS Standards and Processes have been identified. • No claims or objections raised during consultation. Risks are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence, likelihood and residual risk are the same as those defined in the **OPP**. No changes to internal or external context as defined in the **OPP** including no additional objections and claims were raised against this aspect.

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		species there is a relatively small overlap between the operational area and each species range further reducing the likelihood of collision. • 35 threatened, migratory or listed marine bird species, 3 of which are critically endangered (eastern curlew, orange-bellied parrot and curlew sandpiper), and 5 of which are endangered (Grey-headed albatross, Southern giant-petrel, Northern royal albatross, Shy albatross and Gould's petrel) • 9 foraging BIAs; antipodean albatross, Buller's albatross, black-browed albatross, Campbell albatross, common-diving albatross, Indian yellow-nosed albatross, shy albatross, wandering albatross and the wedge-tailed shearwater. The Wildlife Conservation Plan on Seabirds (CoA 2020) does not identify aircraft collision as a threat, however the plan does identify that transport, such as aircraft, flying low over breeding colonies may cause excessive disturbance to breeding individuals. Amplitude has documented instances where individual birds have taken refuge on vessels or the MODU, however there has never been a physical interaction with avifauna which occurred during Amplitude activities in the region. There are no nesting or breeding sites within the operational area, that are within the vicinity of where helicopters may land and take-off from the MODU and vessel. **Summary:** Impacts have been assessed as **Level 2**, based one: • The occurrence of interaction with marine fauna, resulting in injury/mortality, is considered low, due to the short time period of vessel operations within the area (~7 days for survey campaign and ~60 days for support vessel and MODU operations) • The consequence of an impact is predicted to be limited to individuals, due to the localised and short-term nature of the activity. The likelihood of the impact is considered **Unlikely (D)**, and the risk is determined as **Low**.						
Unplanned Discharges								
Unplanned Discharge – Loss of Containment LOC (Chemicals and Hydrocarbons): • Drilling • Vessel operations • MODU operations • Helicopter operations • ROV operations • Well abandonment (contingency)	Change in water quality	Scenarios that have the potential to result in a loss of containment (LOC) of chemicals and hydrocarbons include: • Unplanned surface release of drilling muds/ fluids during operations (<25 m^3) • Unplanned surface release of cement during drilling operations, or bulk transfer (<50 m^3) • Spill to deck of other various chemicals stored on the MODU/ vessels (<5 m^3) • MODU refuelling / bunkering line failure of MDO/MGO (~50 m^3). • Drop out of base oil during well clean-up and test (~1-10 L). • Equipment malfunction leading to helicopter ditching into ocean or fuel tank compromised during landing resulting in a release of fuel to sea (3 m^3). • Unplanned discharge from ROV being operated subsea < 30 L of hydraulic fluid. **Risk: Change in water quality** The unplanned release of chemicals or hydrocarbons from a LOC into the marine environment has the potential to cause a localised reduction in water quality. The hydrocarbon characteristics of a diesel or condensate LOC being highly volatile, light and non-persistent are expected to evaporate rapidly after being released. Therefore, any change in the water quality following a LOC is anticipated to be highly localised, within the immediate vicinity of the release and result in short-term impacts which rapidly recovers. All Activity chemicals which are planned to be discharged are selected in accordance with the Amplitude Energy Offshore Chemical Procedure to ensure ecotoxicity profiles are of an acceptable level. Hydrocarbons or chemicals from a LOC are unlikely to result in a change in sediment quality due to the small volumes released which would quickly dilute and disperse into the water column. The potential for toxicity to marine fauna will be extremely rare as the temporary exposure will preclude toxic effects if marine fauna	Level 2	A	CM01: Marine Exclusion and Caution Zones CM03: Marine Assurance Process CM05: Ongoing Consultation CM07: Well Testing Program CM10: Amplitude Energy Offshore Chemical Assessment Procedure CM14: MODU Material Transfer Process CM21: Activity Fire Fighting Foam Screening and Quarantine Standards	Unlikely (D)	Low	Broadly Acceptable, based on: • Impacts well understood. • Residual risk (severity) is Low. • Consequence is Level 2, localised, short-term impacts, not effecting local ecosystem function. • Activity will not result in serious or irreversible damage. • Good practice controls defined and implemented. • Legislative and other requirements have been identified and met: – Protection of the Sea (Prevention of Pollution from Ships) Act 1983 – Section 26F (implements MARPOL Annex I).

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		pass directly through a release. Given the small discharges, short-potential exposure time due to rapid dilution through metocean conditions, impacts to marine fauna are not expected and therefore have not been assessed further. Further, the energetic offshore environment in the Operational Area would be expected to quickly disperse a release of this nature, resulting in a limited exposure duration and extent to receptors within the marine environment. As such, any exposure to hydrocarbons above background levels would be limited in extent and duration, and any impact is expected to be localised and temporary with rapid recovery to ambient conditions following an accidental release. The potential impacts to water quality are therefore assessed as **Level 2** with localised, short-term impacts, not effecting local ecosystem function. This assessment considers any indirect impacts to species arising from theoretical exposure would be low level and brief given the limited exposure duration and extent due to rapid dispersion and return to ambient conditions post event. While the impact is conceivable and could occur, it would require a rare combination of factors and is therefore considered **Unlikely (D)**. As such the overall risk level is considered **Low**.			CM23: NOPSEMA Accepted Safety Cases CM25: Oil Pollution Emergency Plan (OPEP)			– Navigation Act 2012 – Chapter 4 (Prevention of Pollution). – AMSA Marine Orders 91 and 94 (Marine pollution prevention – oil Marine and packaged harmful substance, respectively) – Industrial Chemicals (Notification and Assessment Act) 1989 – Convention for the Safety of Life at Sea 1974 (SOLAS) – specifically prohibition of the use or storage of firefighting foams containing perfluorooctane sulfonic acid (PFOS) in effect in 2026. • Activity will not impact the recovery of EPBC listed species. • Amplitude Energy MS Standards and Processes have been identified. • No claims or objections raised during consultation. Risks are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence, likelihood and residual risk are the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
								additional objections and claims were raised against this aspect.
Unplanned Discharge – Loss of materials or waste overboard (Hazardous / Non-hazardous waste): • Drilling • Vessel operations • MODU operations	• Change in habitat • Injury/mortality to marine fauna • Change in cultural value	Scenario's that have the potential for the unplanned discharge of hazardous/non-hazardous materials and waste include: • The use of small quantities of hazardous/non-hazardous materials (solids and liquids) on board the vessel and MODU. • The creation, handling and storage of wastes onboard until transference to port facilities. • Rough ocean conditions may cause items may be washed off or blown off deck. **Risk: Injury/mortality - Avifauna, Fish, Marine Turtles and Marine Mammals:** Plastic debris adrift in the ocean accumulate a biofilm in a short space of time which attracts albatrosses and petrels, and consequently, seabirds are highly likely to mistake plastic particles for food and ingest them (CoA 2022). Ingestion of plastics can potentially cause impacts such as gut obstruction or reduced stomach volume, resulting in a loss of fitness and starvation (Wilcox et al. 2015). However, there is currently no evidence to suggest that ingestion or entanglement of marine debris are posing a significant threat to any Australian seabird species at the population level (CoA, 2020). Potential injury/mortality to seabirds from entanglement and ingestion from a loss of materials overboard would be expected to be limited to individual foraging seabirds, with no population level effects. Marine turtles indiscriminate feeding habits make them susceptible to ingestion or entanglement of materials lost overboard, particularly plastics (Mrosovsky et al. 2009). Ingestion of debris can cause internal wounds, suffocation, prevent feeding leading to starvation and can create intestinal blockages that increase buoyance and stop a turtle from diving (CoA 2017a). The operational area does not intersect any recognised BIAs or critical habitats for marine turtles and therefore low numbers are expected in the area. Entanglement can harm or kill individual whales and can reduce the fitness of an individual by causing physical damage and restricting mobility and/or impairing breathing, swimming or feeding ability (CoA 2022). CoA (2022) reports that there have been 104 records of cetaceans in Australian waters impacted by plastic debris through entanglement or ingestion since 1998 (humpback whales being the main species impacted). The Threat Abatement Plan (CoA 2018) suggests that most marine plastic debris are associated to shipping fishery and household activities (fishing gear, balloons and plastic bags). The loss of plastic debris through entanglement is also possible during the Activity. No injury of marine fauna has been reported during Amplitude Energy Offshore Operations to date. Any impacts to cetaceans from a loss of material or waste overboard would be expected to be limited to individuals, with no population level effects. The following management plans and conservation advice identify marine debris as a threat: • National Recovery Plan for Albatrosses and Petrels 2022 (CoA 2022). • Recovery Plan for Marine Turtles in Australia (CoA 2017a). • Wildlife Conservation Plan for Seabirds (CoA 2020). • Threat Abatement Plan for the impacts of marine debris on vertebrate wildlife of Australia's coasts and oceans (CoA 2018). • Blue Whale Conservation Management Plan 2015 - 2025 (DoE 2015a). • National Recovery Plan for the Southern Right Whale (DCCEEW 2024b). • Recovery Plan for the Australian Sea Lion (Neophoca cinerea) (CoA 2013). • Conservation Advice on Dermochelys coriacea (Leatherback Turtle) (DEWHA 2008a).	2	A	CM03: Marine Assurance Process CM13: Offshore Operational Procedures CM19: Waste Management Practices CM28: Retrieval of dropped objects were practicable	Unlikely (D)	L	Broadly Acceptable, based on: • Impacts well understood. • Residual risk (severity) is Low. • Consequence level is Level 2, therefore no potential to affect biological diversity and ecological integrity. • Activity will not result in serious or irreversible damage. • Good practice controls defined and implemented. • Legislative and other requirements have been identified and met: – Marine Order 95 – Marine pollution prevention – garbage (as appropriate to vessel class) – Protection of the Sea (Prevention of Pollution from Ships) Act 1983 - Section 26F (implements MARPOL Annex I) – Navigation Act 2012 – Chapter 4 (Prevention of Pollution). • Threat Abatement Plan for the impacts of marine debris on vertebrate wildlife of Australia's coasts and oceans (CoA 2018). • Activity will not impact the recovery of: – Albatross and Giant Petrel populations breeding and foraging as per the National Recovery Plan for Albatrosses and Petrels 2022 (CoA 2022)

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		Waste generated on board vessels will be handled in accordance with AMSA Discharge Standards and respective vessel Garbage Management Plans (GMP); these require that particular wastes are managed so that it is not lost or discarded overboard Given this, any loss of materials overboard would be in minimal quantities. The consequence of any impacts from marine debris on marine fauna would be limited and is assessed as **Level 2**. This assessment considers any indirect impacts arising from theoretical exposure to hazardous and non-hazardous wastes. While the impact on marine fauna is conceivable and could occur, from this activity, which is short term, it is considered **Unlikely (D)** and as such the overall risk level is **Low**.						– Marine turtles as per the Recovery Plan for Marine Turtles in Australia (CoA 2017a). – Wildlife Conservation Plan for Seabirds (CoA 2020) – Blue whales as per Blue Whale Conservation Management Plan 2015 - 2025 (DoE 2015a) – Southern right whale as per the National Recovery Plan for the Southern Right Whale (DCCEEW 2024b) – Australian sea lions as per Recovery Plan for the Australian Sea Lion (Neophoca cinerea) (CoA 2013) – Leatherback turtle as per Conservation Advice on Dermochelys coriacea (Leatherback Turtle) (DEWHA 2008a) – Recovery Plan for the White Shark (Carcharodon carcharias) • Amplitude Energy MSS and Processes have been identified. • No claims or objections raised during consultation. Risks are expected to be below the defined acceptable levels as described in the **OPP** by meeting the additional acceptability criteria described in Section 5.2.4.3, such as: • **OPP** EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • **OPP** control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2).
		Risk: Change in Benthic Habitat: The loss of large materials overboard during drilling operations may result in localised and temporary disturbance to benthic habitats. The impact footprint on benthic habitats would align with the size of the object dropped overboard. Large materials with the potential to be lost overboard include anchors, tubulars, containers, etc. These items are expected to be inert and will not represent a contamination risk to benthic habitats. Once a dropped object has been recovered; the seabed is expected to recover naturally. Benthic assemblages in the operational area are characteristic of the shelf rocky reef and hard substrate KEF that is well represented in the wider Bass Strait region (see Table 4-4). A loss of material or waste overboard occurring within the operational area has the potential to result in seabed disturbance to the KEF and impact some of the associated values, such as diversity and productivity of the hard substrate which are often colonised by sponges, sessile invertebrates, soft corals. Results from a 2020 seabed survey adjacent to the operational area observed hard ground and patchy epifauna, consistent with the description of the KEF, however no reef-type structures of high relief were observed (Fugro 2020a; 2020b). The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location. The operational area does not overlap AMPs, and no ecological communities listed as threatened under the EPBC Act were observed. Therefore, the risk of change in habitat from loss of materials or waste overboard would not be expected to significantly alter the overall character of the seabed, or its ecological amenity. Waste generated on board vessels will be handled in accordance with AMSA Discharge Standards and respective vessel Garbage Management Plans (GMP); these require that particular wastes are managed so that it is not lost or discarded overboard. Given this, any loss of materials overboard would be in minimal quantities. The consequence of any impacts from marine debris on benthic habitats would be limited and is assessed as **Level 1.** This assessment considers any indirect impacts arising from theoretical exposure to hazardous and non-hazardous wastes. While the impact on benthic habitats is conceivable and could occur, from this activity, which is short term, it is considered **Unlikely (D)** and as such the overall risk level is **Low**.	1	A		Unlikely (D)	L	
		Risk: Change to Cultural Heritage: The loss of materials or waste overboard may result in changes to cultural heritage, such as, the disturbance of underwater cultural heritage including shipwrecks, aircraft and other artefacts. A search of the Australasian Underwater Cultural Heritage Database found one shipwreck, Alfred (<75 years old ID 11052), located near the border of the operational area. On further investigation the position given for the wreck was confirmed to be a search area centrepoint; these are provided when the location of a wreck is unknown; there are over 300 wrecks like this offshore Victoria (pers comm Heritage Victoria 2024); written records further indicate the wreck is likely closer to Warrnambool, and not relevant to the operational area of the Activity. No shipwrecks have been observed during survey or inspections within and proximal to the operational area to date. Most recent surveys and inspections were in 2020.						

Aspect	Predicted Impacts and Risks	Consequence Evaluation	Consequence	ALARP Decision Context	Control Measures	Likelihood	Residual Risk Severity	Acceptability Outcome
		The predicted level of impact, i.e., the consequence, of change to cultural heritage from a loss of material or waste overboard resulting in seabed disturbance is evaluated to have a consequence of **Level 1** based on: • No expected underwater cultural heritage artefacts within the operational area based on screening assessments, previous inspection and survey and stakeholder engagement. Waste generated on board vessels will be handled in accordance with AMSA Discharge Standards and respective vessel Garbage Management Plans (GMP); these require that particular wastes are managed so they are not lost or discarded overboard. Given this, loss of materials overboard such as plastics to the marine environment is not expected. This assessment considers any indirect impacts to cultural heritage arising from theoretical exposure to materials lost overboard. While the impact is conceivable and could occur, from this activity, which is relatively short term, it is considered **Unlikely (D)**. The inherent risk severity of the change to cultural heritage is considered **Low**.						• Consequence, likelihood and residual risk are the same as those defined in the **OPP**. • No changes to internal or external context as defined in the **OPP** including no additional objections and claims were raised against this aspect.

6.3 Seabed Disturbance

6.3.1 Cause of Aspect

The activities where seabed disturbance will occur as a result of the Activity are identified in Table 6-5 and described in further detail in subsections below.

Table 6-5: Activities that will result in Seabed Disturbance

Aspect / Phase	Activity component
Well construction	MODU positioning (mooring)
	Drilling operations
	Drill cuttings and fluids
	Cementing operations
Support activities	Vessel operations
	ROV / AUV operations
Contingent activities	Environmental survey
	Well abandonment

6.3.2 Aspect Characterisation

Table 6-6 summarises the seabed disturbance extents estimated for the Activity.

Table 6-6: Seabed Disturbance Estimated Spatial Extent

Aspect	Activity Component	Estimated Disturbance Spatial Extent	Total Estimated Disturbance Spatial Extent
Well construction	MODU positioning Pre-lay moorings	Mooring at the well will require between 8 and 12 anchors. Estimated spatial extent of up to: • 60 m^2 per anchor. Typically mooring chains extend from the MODU with 1,200 m of grounded chain. A disturbance of 5 m is applied to account for lateral movement during deployment, use and recovery. Estimated spatial extent per chain: • 6,000 m^2 grounded chain per line (0.006 km^2) Total for each mooring chain and anchor: • 0.0727 km^2 (12 x 0.00606 km^2)	~0.0727 km^2
	Wet storage operations	Wet storage of mooring chains may occur at the well location for the duration of the activities. Estimated spatial extent: • 1.0 km^2 (10 x 1,000 m anchor lines spaced 100 m apart).	1.0 km^2
	Drilling operations	Disturbance radius of 200m at the well location.	0.126 km^2

Aspect	Activity Component	Estimated Disturbance Spatial Extent	Total Estimated Disturbance Spatial Extent
Support activities	Vessel operations	A maximum of 3 AHTSs will be within the operational area at any one time whilst well construction is being undertaken. Vessels will typically use thrusters or DP to maintain position, but in an emergency situation, anchoring may be required. A vessel anchored within water depths greater than 70 m (deeper than the operational area) with a single anchor could result in a total disturbance area of up to 1,300 m^2 (NERA 2018). Estimated spatial extent per vessel: • 1,300 m^2 (0.0013 km^2)	3,900 m^2 (0.0039 km^2)
	ROV / AUV operations	Seabed mooring of ROV is not planned during ROV support operations. ROVs may be required to park or moor on the seabed and may temporarily sit on the seabed as part of execution activities. If parking is required, the disturbance footprint is estimated to be less than 10 m^2.	< 10 m^2 (<0.00001 km^2)
Contingent activities	Environmental survey	An environmental survey is not a planned activity. However, should an unexpected find be encountered, an environmental survey including seabed sampling will be conducted. Up to 10 grab samples may be required as a contingent activity (0.1 - 0.2 m^2 per sample).	< 2 m^2 (<0.000002 km^2)
Decommissioning activities	Well abandonment	Contingent well abandonment in event Annie-2 development well is not tied into the CHN pipeline. Well abandonment activities within the disturbance area of 200 m radius (0.126 km^2)	0.126 km^2
Total estimated seabed disturbance for the Activity:			1.32 km^2

**Note: As a conservative approach, a 200 m disturbance radius for the well and manifold locations has been adopted based on the furthest extent that drill cuttings may be deposited during drilling operations.

6.3.3 Predicted Environmental Impacts and Risks

Seabed disturbance from the Activity can result in direct and indirect impacts.

Potential impacts from seabed disturbance are:

- change in benthic habitat
- disturbance to benthic assemblages

Potential risks associated with seabed disturbance are:

- injury / mortality to marine fauna
- change to cultural heritage.

Seabed disturbance will only occur within the operational area. Receptors which may be directly affected include the benthic habitat, benthic assemblages, and marine invertebrates and fish. Indirect effects are possible to commercial fisheries, conservation values of protected areas and First Nations cultural values and sensitivities. Impacts and risks to First Nations cultural heritage are assessed in Section 8.0.

6.3.4 Impact and Risk Evaluation

6.3.4.1 Impact: Change in Benthic Habitat

Inherent Consequence Evaluation

As described in Section 4.0, benthic habitats in the operational area are characteristic of a seabed comprised of hard substrate and reef with patches of sand or gravel / rubble. These substrates are well represented in the wider Bass Strait, particularly in the Otway Region. Benthic assemblages within and proximal to the operational area have been observed during subsea habitat surveys and facility inspections. Fugro (2020; 2020a) identified hard ground and some sand, supporting patchy areas of abundant epibiota, typically bryozoans, gorgonian, cnidarians and sponges. No ecological communities listed as threatened under the EPBC Act were identified and the operational area does not overlap AMPs.

Within the operational area, ~1.32 km^2 of seabed has the potential to be disturbed by the temporary placement of equipment on the seabed during well construction and support activities. Approximately, ~0.0727 km^2 of the 1.32 km^2 has the potential to disturb the seabed during the Activity from mooring of the MODU. Once the MODU has completed the well construction activities, the anchor system will be removed from the seabed, which will allow for benthic habitats to recover. As a result, the planned seabed disturbance from well construction activities will be short-term.

Secondary impacts from scouring may occur. Scouring is a natural feature on the Otway shelf whereby currents may erode sediments around hard calcareous sediments (Fugro 2020a; 2020b). Installation of subsea infrastructure (BOP) will introduce the presence of hard features on the seabed which may encourage scouring processes in areas immediately surrounding seabed infrastructure installed for the Activity.

Wet storage of mooring chains may occur at the well location for the duration of the activities. The estimated extent will be highly localised, within the operational area (<1.0 km^2).

The operational area occurs in the southeast marine region, where the shelf rocky reefs KEF occurs. These are areas of rocky reefs and hard substrates along the continental shelf which provide unique seafloor habitat for diverse assemblages of species (Section 4.4.3). Activities occurring within the operational area are likely to result in seabed disturbance to the KEF and impact some of the associated values, such as diversity and productivity of the hard substrate which are often colonised by sponges, sessile invertebrates, soft corals. The Fugro (2020a; 2020b) survey observed hard ground and patchy epifauna throughout most video transects, consistent with the description of the KEF, though no reef-type structures of high relief were observed. A geophysical seabed survey was undertaken in the Annie field (covered under ASP EP (accepted May 2025), refer Section 4.3.1)

Therefore, seabed disturbance is not anticipated to significantly impact the overall marine ecosystem integrity or functioning of the KEF.

Following the removal of MODU mooring system, recovery of benthic habitats is expected to be within months (e.g., Morrisey et al. 2018). Dernie et al. (2003) demonstrated that the full recovery of soft sediment assemblages from physical disturbance could take between 64 and 208 days

depending on disturbance intensity. During Stage I & II of the CHN development, subsea surveys of the flowlines and umbilicals demonstrate colonisation by sponges, bryozoans, and hydrozoans on the installed infrastructure and within the installation disturbance footprint. Certain benthic species, such as sponges, can undergo a variety in reproductive techniques, allowing them to be efficient colonisers of hard marine surfaces (Butler 2002). Once established, sponges have been shown to be effective competitors in retaining living space through asexual reproduction and by using chemicals to deter competitors and predators (Butler 2002). Therefore, benthic assemblages are expected to recolonise and recover to baseline levels following the installation and also removal of the infrastructure. Based on the nature and scale of the planned activities and the expected seabed characteristics, areas of seabed disturbed by the Activity are expected to recolonise quickly and impacts from seabed disturbance are not expected to cause long-lasting changes to benthic habitats.

The predicted level of impact, i.e., the consequence, as a result of a change in benthic habitat from seabed disturbance is evaluated to have a consequence of **Level 2** based on:

- The planned seabed disturbance area is subject to localised and short-term changes to seabed habitats with no long-term effects to habitat, population characteristics or productivity.
- The total estimated area of impact is predicted to be small (1.32 km^2) compared to the extent and distribution of the benthic habitats and associated fauna identified within the operational area and wider region.
- Shelf rocky reefs KEF is present within the south east marine region with multiple examples in the Otway (Section 4.4.3).
- The operational area includes areas of hard substrate.
- The operational area does not overlap AMPs.
- Seabed survey results have informed the placement of the wet storage of mooring chains, considering seabed relief, substrate and hazards to ensure the most appropriate location with the lowest impact is selected.
- Disturbance is anticipated to be localised and recoverable and not impact ecosystem functioning of benthic habitats.

6.3.4.2 Impact: Disturbance to Benthic Assemblages

Inherent Consequence Evaluation

Activities related to well construction and support operations for the Activity will result in changes to water quality from the suspension and redeposition of sediments. Changes in water quality have the potential to impact benthic assemblages, including benthic invertebrate communities, characteristic of the broader region.

During well construction and well abandonment (if required), drilling cuttings and cement overflow will add to the unconsolidated substrates. These are expected to redistribute over time due to the surrounding geomorphology and hydrodynamics and thus would not be expected to significantly alter the overall character of the seabed. The impact to benthic and demersal communities from suspension of sediments is expected to be minimal given the open-ocean environment in which the hydrodynamics expect to disperse or dilute suspended sediment quickly following disturbance. The substrates present within the area where seabed disturbance is predicted are considered to be primarily mobile due to adjacent surveys recording sand waves and localised burial of equipment (Fugro 2020; 2020a).

Sessile invertebrates are particularly vulnerable to sedimentation because they are generally unable to reorientate themselves to mitigate a build-up of particulates. However, some sessile taxa such as sponges, and bivalves can filter out or physically remove particulates (Roberts et al. 2006; Pineda et al. 2016). Sediment-burrowing infauna and surface epifauna invertebrates (particularly filter feeders) which inhabit the seabed directly around subsea infrastructure locations are expected to be most impacted by seabed disturbance. Although, Kukert (1991) found that approximately 50% of the macrofauna on the bathyal sea floor were able to burrow back to the surface through 4-10 cm of rapidly deposited sediment. The sensitivity of such infauna and epibenthic communities to changes in water quality are expected to be low given their resilience to natural stressors including storm events and associated episodic increases in particulate load. Any disturbance to benthic assemblages from Activity activities is expected to be localised and short-term.

The predicted level of impact, i.e., the consequence, to benthic assemblages from changes to water quality is evaluated to have a consequence of **Level 2** based on:

No threatened benthic species, assemblages or ecological communities were identified within the operational area.

The area of impact is in a deep, open-water environment in which the hydrodynamics allow disturbed soft sediments to disperse and become diluted relatively quickly therefore any decrease in water quality is expected to be localised and temporary, and similar in nature to natural variability in turbidity.

6.3.4.3 Risk: Injury / Mortality to Marine Fauna

Benthic assemblages and invertebrates

Seabed disturbance during the Activity has the potential to result in result in the direct loss of benthic assemblages and invertebrate communities within the predicted seabed disturbance spatial extent.

Benthic assemblages and invertebrates in the operational area may include patchy presence of epifauna such as bryozoans, gorgonian cnidarians and sponges (Fugro 2020; 2020a), molluscs such as the arrow squid (Kailola et al. 1993) and crustaceans such as rock lobsters (Section). The presence of these invertebrate communities is representative of what is expected throughout the Otway Basin.

Injury / mortality to benthic and demersal invertebrate communities from seabed disturbance is expected to be localised given the limited extent of the footprints associated with the Activity. Benthic and demersal invertebrate communities within the predicted disturbance spatial extent are highly represented throughout the region. Disturbed areas are expected to recover through natural dispersion and settlement of planktonic phase invertebrates and asexual regrowth of organisms such as sponges.

Mobile invertebrates, including some molluscs and crustaceans, are generally less vulnerable to seabed disturbance activities given the ability to move away (Fraser et al. 2017). However, sediment burrowing infauna and surface epifauna invertebrates (particularly filter feeders) which inhabit the seabed directly around subsea infrastructure locations are expected to be most impacted by seabed disturbance activities. As a result, direct loss of infauna and epifauna within the planned disturbance areas is expected.

Dernie et al. (2003) conducted a large-scale study that investigated the recovery of marine benthic communities in a variety of soft sediment types (i.e., clean sand, silty sand, muddy-sand and mud) following a physical disturbance. Low intensity activities (i.e., bait digging and hand-raking) up to high intensity activities (i.e., trawling and suction-dredging) were performed in within the

experiment to generate physical disturbance. The study showed that full recovery of soft sediment assemblages from physical disturbance could take between 64 days for low intensity disturbances, and up to 208 days for higher intensity disturbances (Dernie et al. 2003). In-field inspections around existing CHN facilities, during Stage I & II of the CHN development, confirm recovery of benthic assemblages, with colonisation of installed equipment and surrounding seabed. Therefore, the loss of infauna and epibenthic communities is expected to be recoverable whereby surrounding infauna and epibenthic communities will recolonise impacted areas and likely to colonise on the surface of equipment installed, as observed during in-field inspections (Cooper Energy 2022).

Taking into account the above, injury / mortality to benthic assemblages and benthic invertebrate communities from seabed disturbance is expected to be short term / recoverable based on observations of natural regrowth and recovery around existing facilities.

The predicted level of impact, i.e., the consequence, to benthic assemblages and invertebrate communities from seabed disturbance is evaluated to have a consequence of **Level 2** based on:

- Shelf rocky reefs KEF is present within the south-east marine region with multiple examples in the Otway (see Section 4.4.3 and 6.3.3.1). The operational area includes areas of hard substrate.
- Invertebrate communities in the operational area are representative of what is expected throughout the Otway Basin.
- No threatened benthic species, assemblages or ecological communities were identified within the operational area
- The planned seabed disturbance area is subject to localised and short-term changes to benthic habitats with no long-term effects to habitat, population characteristics or productivity.

Fish (including sharks and rays)

Seabed disturbance during the Activity has the potential to impact fish and subsequently commercial fisheries. Impacts are limited to sessile fish species that do not have the ability to avoid seabed disturbance activities, therefore resulting in injury and death.

Slow moving and site-attached fish species are particularly susceptible to habitat modification through physical smothering, and burial as they may not be able to quickly move away and avoid seabed disturbance. These animals could be displaced, injured and individuals may not recover. However, the areas of direct disturbance associated with the Activity are small, and the equipment being placed on the seabed adds to the hard substrate and complexity of the seabed, providing surfaces for site attachment. Within days, and then over the subsequent years, marine growth begins to establish on these structures, adding to the surrounding seabed habitat (McLean et al. 2022).

Sessile and slow-moving fish species including pipefish, pipehorses, seadragons and seahorses are found in a variety of habitats ranging from deep reefs to coastal algae or weed or seagrass habitats (Kuiter 2000). The seabed proximal to the operational area does not include weed or seagrass habitats (Fugro 2020; 2020a). The majority of the area within and proximal to the operational area is hard substrate and patches of sand and rubble. However, according to the PMST report, 26 fish species are said to have the potential to occur within the operational area (all of which are pipefish, pipehorses, seadragons and seahorses) (Appendix 5 -). There are four threatened species that may be present in the operational area including blue warehou, Australian grayling, white shark and eastern school shark. Migratory species include species that may be present within the operational area include white shark, grey nurse shark and mackerel porbeagle. There are no BIAs or Habitat Critical areas for these species intersected by the operational area. Except for pipefish, pipehorses, seadragons and seahorses, all species are highly mobile and are expected to move away and avoid

injury during seabed disturbance activities. Certain seahorse species, such as the big-belly seahorse (Hippocampus abdominalis) have been identified in water depths up to 104 m; attached to sponges and colonial hydroids (DoE 2024).

The majority of the area within and proximal to the operational area is hard substrate and patches of sand and rubble. This seabed type does support benthic fauna including sessile marine invertebrates such as sponges (Fugro 2020; 2020a). Any impacts from direct disturbance are expected to occur within a localised spatial extent (Table 6-6). A seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and no sensitive habitats, such as sponge-dominated reefs were identified (MMA Offshore 2025b). The seabed and assemblages are expected to recover naturally, as demonstrated by surveys of existing Otway offshore infrastructure and adjacent seabed showing regrowth over and around equipment on the seabed. Therefore, any impacts to sessile individuals found within the estimated spatial extent are not anticipated to change the viability of the respective populations.

Two State commercially fished benthic invertebrate species are present within the operational area, the giant crab and southern rock lobster, and could be susceptible to indirect impacts from seabed disturbance. This also includes any reef-associated fish that are caught in lobster pots as by-catch and harvested, particularly those with high site fidelity, such as the bluethroat wrasse (Edgar et al. 2004). Commonwealth commercial fish species that may occur within the operational area include elephantfish, gummy shark, sawshark and school shark. These commercial fish and shark species are not known to exhibit site fidelity and are anticipated to be transient through the operational area. Therefore, impacts are predicted to be limited to temporary and localised avoidance behaviours during seabed disturbance activities. Lobster, crab and reef-associated fish species are mobile species and generally considered less vulnerable to seabed disturbance compared to sessile taxa as they are able to move to areas with less sediment accumulation or by more efficiently physically removing particles (Fraser et al. 2017). Seabed disturbance within the operational area is not expected to result in a change in the viability of the population of commercially important fish species.

Fishing records that indicate possible activity of 2 Commonwealth and 4 State fisheries in the vicinity of the operational area (Table 4-4).

Any impact from the seabed disturbance during the Activity are anticipated to be highly localised and limited to within the established temporary and long-term exclusion zones established for the Activity. As discussed previously, the extent of these exclusion zones is insignificant in comparison to the larger area of available fishing grounds for the relevant fisheries (Figure 4-14 to Figure 4-19). Therefore, impacts to commercial fisheries from seabed disturbance are not expected to occur.

The predicted level of impact, i.e., the consequence, to fish from seabed disturbance is evaluated to have a consequence of **Level 1** based on:

- Potential impacts to fish, including sessile species are expected to be localised and recoverable.
- Potential impacts to commercial fish species are expected to be limited to temporary and localised avoidance behaviours.
- Due to the area of seabed which may be disturbed (~1.32 km^2) within the wider extent of fish distribution ranges and available fishing grounds, and the relatively short duration of the activity, impacts to commercially important species are expected to be localised and insignificant at a population level.

Inherent Likelihood

Benthic assemblages adjacent to the operational area have been observed during surveys and inspections of existing Otway offshore facilities. The surveys observed modified (around infrastructure) and unmodified marine environments with scattered areas of hard ground supporting patchy areas of abundant epibiota, typically bryozoans, gorgonian, cnidarians and sponges (Fugro 2020; 2020a). The scattered and patchy presence of benthic and demersal invertebrate communities indicate a potential overlap of communities with the planned disturbance area through the life of the Activity.

The inherent likelihood of a **Level 2** consequence occurring is therefore rated as **Likely (B).**

Inherent Risk Severity

The inherent risk severity of injury / mortality to benthic assemblages, invertebrate communities and fish species is considered **Moderate**.

6.3.4.4 Risk: Change to Cultural Heritage

Inherent Consequence Evaluation

Seabed disturbance may result in changes to cultural heritage such as:

Disturbance of underwater cultural heritage including shipwrecks, aircraft and other artefacts.

A search of the Australasian Underwater Cultural Heritage Database found one shipwreck, Alfred (<75 years old ID 11052), located near the border of the operational area. On further investigation and consultation with Heritage Victoria, the position given for the wreck was confirmed to be a search area centrepoint; these are provided when the location of a wreck is unknown; there are over 300 wrecks like this offshore Victoria (pers comm Heritage Victoria 2024); written records further indicate the Alfred is likely closer to Warrnambool, and not relevant to the operational area of the Activity.

No shipwrecks have been observed during survey or inspections within and proximal to the operational area. Consultation with Heritage Victoria indicated that the risk of the Activity impacting cultural heritage was low, given the limited footprints involved. Landscape scale impacts (submerged landscapes) were also not expected given the limited seabed footprints involved (pers comm Heritage Victoria 2024); these impacts will be limited to the operational area.

Some of the area now offshore was a terrestrial landscape during previous glacial maxima periods out to approximately the 95 m isobath of the present day (De Decker et al. 2020). It is likely that it was inhabited by First Nations peoples and there may be features or artefacts of cultural heritage value in the offshore environment (pers comm DPC 2024). The high energy nature of the ocean within the Otway region has eroded the seabed over the millennia since its inundation; this reduces the likelihood of finding cultural heritage artefacts in the area, though does not discount the possibility, and though features may have eroded over time, they remain features of a cultural landscape.

The Tyrendarra lava flow associated with the significant Budj Bim aquaculture system (Section 8.0) is identified as a landscape feature of particular cultural significance; its historical and current values have been specifically identified as of importance during consultation, and in review of First Nations' Country Plans. Tyrendarra is a newer volcanic province outcrop (~30K years old) located near Portland, and extends from Mount Eccles into the offshore environment, to Julia Reef. Amplitude Energy geologists investigated whether these kind of landscape features may occur within the operational area for the activity. Analysis of shallow geology and volcanic features within the region,

including review of 3D seismic data, indicates there are no newer volcanic complexes within the operational area (Figure 6-7).

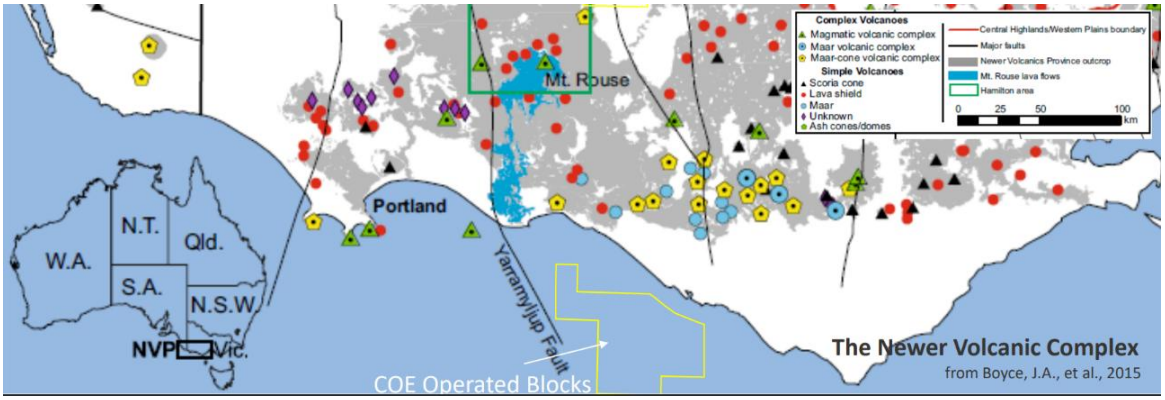


Figure 6-7: Newer Volcanic Complexes in the Otway Region (Boyce 2015)

There is potential for unknown underwater cultural heritage to be disturbed from activities that may cause seabed disturbance. However, the predicted level of impact, i.e., the consequence, of change to cultural heritage from seabed disturbance is evaluated to have a consequence of **Level 1** given the small footprint of the Activity, and that within that footprint, the majority of contact with the seabed is temporary.

Inherent Likelihood

No known underwater cultural heritage such as shipwrecks, aircraft, and other artefacts occur within the operational area however the potential remains. This region was once a terrestrial landscape and is likely to have been inhabited; therefore, there may be features with heritage value. Seabed disturbance from the Activity is not expected to result in damage to UCH. However, in exceptional circumstances there is a remote chance of change to unknown underwater cultural heritage within the planned disturbance area.

As a result, the inherent likelihood of a Level 1 consequence occurring is rated **Remote (E)**.

Inherent Risk Severity

The inherent risk severity of change to cultural heritage is considered Low.

Given the risk of damage to UCH cannot be eliminated at this stage of planning, additional control measures have been designed into the EP, to be implemented before drilling commences, and during the drilling activities. These measures provide assurance that UCH will be protected as required by the UCH Act 2018

6.3.5 Control Measures, ALARP, and Acceptability Assessment

Table 6-7 provides a summary of the control measures and ALARP and acceptability assessment relevant to seabed disturbance.

Table 6-7: Seabed Disturbance ALARP, Control Measures and Acceptability Assessment

Seabed Disturbance	
ALARP Decision Context and Justification	**ALARP Decision Context: Type A**

Seabed Disturbance	
	Impacts from seabed disturbance are well understood. The total estimated area of impact is predicted to be small (1.32 km^2) compared to the extent and distribution of the benthic habitats and associated fauna identified within the operational area and wider region (Fugro 2020; 2020a). Activities are well practised, and there are no conflicts with company values, no partner interests, and no significant media interests. Given this, Amplitude Energy applies ALARP Decision Context A.
Control Measure	Source and Description of Control
CM13: Offshore Operational Procedures	Seabed surveys will be undertaken prior to finalising MODU position and location of mooring equipment, and prior to installing or removing the wellhead. Mooring procedures will ensure: • Adequate tensioning of mooring is applied and maintained. • Anchors are located within the designed radius areas of the mooring spread. • Seabed relief and sensitive seabed features are considered. The seabed survey was undertaken in May & June 2025 (refer Section 4.3.1).
CM30: Underwater Cultural Heritage Disturbance Risk Management Measures	Amplitude Energy Cultural Heritage Disturbance Risk Management Measures acknowledge legislative requirements and establishes the methods by which potential disturbance to cultural heritage is identified including via screening, consultation, and expert advice as required. The management measures are applicable to the offshore Activity to ensure impacts and risks throughout the Activity remain within acceptable levels and are managed to ALARP. In accordance with advice from Heritage Victoria and DPC during Activity consultation, and in line with the UCH Guidelines (DCCEEW 2024d), prior to commencement of well construction activities a suitably qualified and experienced cultural heritage team will review geophysical data gathered during seabed surveys for underwater cultural heritage so that it is avoided by the subsequent drilling activities with a suitable buffer. The team will include a marine archaeologist and will also have familiarity with first Nations cultural landscapes and experience in identifying landscape features from geophysical data. Any subsequent management advice (e.g. exclusion zones) will be provided to Heritage Victoria and accounted for within Activity installation procedures. If cultural heritage is identified, it will be mapped, along with suitable buffer and its location integrated into Activity inductions and procedures to ensure it is avoided during Activity.
Additional Control Measures Considered	
No anchoring	Reject Potential to reduce seabed disturbance footprint, however, it is not feasible to have the MODU on DP only in the water depth of the operational area. The use of DP would also result in a worse noise emission profile. Therefore, the potential to reduce the seabed disturbance footprint is grossly disproportionate to the benefits gained.
MODU Mooring Plan	Adopt (CM 14: Offshore Operational Procedures) A MODU mooring plan would locate anchors / mooring design to optimise fatigue and mooring life. The plan will also minimise impact on existing infrastructure.
Choose location of footprint to minimise impact to 'sensitive	Reject May reduce impact to sensitive species and areas in the operational area. However, rocky reef is widespread throughout the operational area, and

Seabed Disturbance	
benthic habitat' / or emergency features	therefore not able to be avoided. There are also increased safety risks associated if anchors can't be located in optimal position.
Reduce seabed footprint	Reject Heavy anchors, hard substrate etc. Safety hazard.
Seabed Survey	Adopt (CM16: Seabed Survey) Seabed survey will be undertaken prior finalising MODU position and location of mooring equipment, and prior to installing the wellhead.
Decommissioning Protocol	Adopt (CM27 Amplitude Energy Decommissioning Protocol) Amplitude Energy will meet the requirements of Section 572 ('Maintenance and removal of property etc. by titleholder') of the OPGGS Act.
Impact and Risk Summary	
Residual Impact Consequence	**Level 2** - Localised short-term impacts to benthic habitat with no remedial actions or recovery required.
Residual Risk Consequence	**Level 2** - Localised short-term impacts to benthic habitat with no remedial actions or recovery required.
Likelihood	Due to the nature and scale of the proposed activities, and considering the proposed controls, the likelihood of impacts to cultural heritage due to seabed disturbance is assessed as: • **Remote (E) -** A freak combination of factors would be required for occurrence. Not expected to occur during the activity. Occur in exceptional circumstances. In regard to the likelihood that benthic habitats will be impacted by seabed disturbance associated with the localised placement of equipment and materials is assessed as: • **Likely (B) -** Not certain to happen but an additional factor may result in an occurrence. Expected to occur from time to time during the activity.
Residual Risk	Moderate
Demonstration of Acceptability	
Principles of ESD	Seabed disturbance is evaluated as having Level 2 risk consequence which is not considered as having the potential to result in serious or irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required.
Legislative and Conventions	Legislative requirement: Section 572 of the OPGGS Act details the requirements for removal of property will be met for the Activity.
Internal Content	Relevant management system processes adopted to implement and manage hazards to ALARP include: Relevant management system processes adopted to implement and manage hazards include: • Risk Management (MS03) • External Affairs, Investor Relations, Community and Stakeholder Management (MS05) • Operations Management (MS07) • Technical Management (MS08) • Health Safety and Environment Management (MS09) • Supply Chain and Procurement Management (MS11). Activities will be undertaken in accordance with the Implementation Strategy (Section 11.0)

Seabed Disturbance	
External Context	Activity will be undertaken in a manner consistent with relevant legislation, industry standards and guidelines, offshore practices and benchmarking. The activity is not predicted to result in impacts to species that would be inconsistent with recovery plans or conservation advice.
Other requirements	No feedback from stakeholders has been received that would inform the values and sensitivities /existing environment, impacts and risks, performance outcomes or mitigation measures for seabed disturbance.
Demonstration of meeting the defined acceptable levels in the OPP	Section 8.8.6 of the **East Coast Supply Project OPP** demonstrates the acceptability of impacts and risks associated with seabed disturbance. This acceptability demonstration is also valid and appropriate for the Activity (given this Activity is described and assessed in the OPP) and is supported by further evaluation against the acceptability factors as detailed above. Impacts and risks associated with the Activity are expected to be below the defined acceptable levels as described in the OPP by meeting the additional acceptability criteria described in Section 5.2.4.3, such as that for seabed disturbance: • OPP EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • OPP control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence, likelihood and residual risk are the same as those defined in the OPP. • No changes to internal or external context as defined in the OPP including no additional objections and claims were raised against this aspect.
Acceptability Outcome	Acceptable Amplitude Energy has determined that impacts and risks related to seabed disturbance are acceptable, based on: • The planned management of impacts and risks integrates Amplitude Energy internal requirements, including relevant management system processes. • The activities will be managed in a way that is not inconsistent with the relevant principles of ESD. • The proposed controls and impact and risk levels are not inconsistent with national and international standards, laws, and policies including applicable plans for management and conservation advice, and significant impact guidelines for MNES. • No claims or objections were raised during consultation that would inform the values and sensitivities /existing environment, impacts and risks, performance outcomes or mitigation measures. To manage impacts to receptors to or below the defined acceptable levels the following EPOs have been applied: • EPO6: The selection of the location for wells and associated planned impacts will: – avoid areas of high relief outcrops, reefs, and sponge beds, where practicable – not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018. • EPO8: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.

Seabed Disturbance	
	• EPO9: Seabed disturbance limited to the planned disturbance areas defined in this OPP and limited to within the Operational Area • EPO10: Impacts to commercially targeted species will be limited to temporary [1] and localised1 change in fauna behaviours. • EPO11: Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within EPs for the activity. • EPO23: No impact to underwater cultural heritage.

6.4 GHG Emissions

6.4.1 Cause of Aspect

Direct GHG emissions that will be generated as a result of the Activity are identified in Table 6-8 and described in further detail in subsections below. GHGs are emitted to the atmosphere when hydrocarbons are burned, flared or vented. The types of GHG emissions that will be generated during the activities, and that account for the vast majority of GHG emissions generated by the activities, include carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4).

Table 6-8: Activities that will Generate GHG Emissions

Aspect / Phase	Activity component
Well construction	Well clean-up and flowback Mud degassing
Support activities	MODU operations
	Vessel operations
	Helicopter operations
Contingent activities	Well abandonment activities
	Environmental surveys

6.4.2 Aspect Characterisation

6.4.2.1 Well Construction

Well construction will be carried out using a MODU and flaring may occur during flowback activities and well clean-up. Throughout well clean-up and flowback activities, the well is flowed to test well flow rates, and remove contaminants including drilling or completions fluids, debris and solids from the formation, which are circulated back to the MODU. For safety purposes, this gas is flared. If required, flaring is estimated to take <36 hours to complete.

During well construction, gas from the well bore may become entrained in the mud. The drilling mud is recirculated and degassed once outside the wellbore to remove the entrained gas. During mud degassing, gases entrained in the mud are separated from the mud and vented directly to the atmosphere.

[1] Temporary and localised change in fauna behaviours for commercially targeted species limited to activity durations and seabed disturbance footprint defined in Section 6.3.

The durations of the well flowback and associated flaring depend on the complexity of the reservoir and data required to characterise them. Small quantities of condensate may be recovered with the gas and flared; these quantities of condensate are not included within the GHG inventory as they are considered within the total estimate margin provided.

6.4.2.2 Support Activities

Vessels and the MODU use diesel or gas to generate power for operations. The MODU will be present in the operational area during well construction, and for any required contingent activities. Vessels will be used for several activities such as bunkering and bulk transfer, collection and potentially treatment of waste from the MODU, site surveys, vessel positioning, towing the MODU and mooring installation. Vessels are expected to be present in the operational area for all activities of the Activity. The maximum number of vessels in the operational area at a time is expected during drilling activities and is expected to be 3 AHTS or supply vessels, plus the MODU.

Vessels will likely use marine gas oil (MGO) or marine diesel oil (MDO) instead of heavy fuel oil (HFO). Emissions calculations are based on MDO to provide a conservative estimate. Vessels and the MODU may also be a source of fugitive emissions with the presence of fuel storage tanks on board. That is considered immaterial, and it is not included in the GHG inventory.

Helicopters will be used during the activities, primarily for crew change and medevac, and occasionally equipment and material transfers. Helicopter flights are expected to occur 5-8 times a week, dependent on the progress of the Activity, and logistical constraints. Helicopters use aviation fuel.

6.4.2.3 GHG Modelling

Scoping

GHG emissions are described as direct or indirect and relate to emissions that occur as a direct result of the Activity. Figure 6-8 describes the emissions estimation, monitoring and reporting workflow applied to the activities provided for under this EP.

The sources of emissions factors and estimation methods are also described within Figure 6-8.

Direct GHG Emissions

Direct GHG emissions are created as a direct result of the East Coast Project activities within Commonwealth jurisdiction, for all phases (surveys, drilling, installation and commissioning, operations and decommissioning) and support activities. These emissions originate from the use of support activities – MODU and vessels within Commonwealth waters, including flaring and fuel use by vessels.

The direct emissions do not equate to scope 1 emissions (i.e., emissions under operational control of the organisation) under the *National Greenhouse and Energy Reporting Act 2007* (Cwth), as the direct emissions in this inventory include relevant Support Operations both within and outside of Amplitude Energy's operational control.

To estimate emissions, a range of information sources are used:

- Fuel consumption rates are based on MODU/vessel spec sheets and historical consumption rates.
- Flaring rates are based on the expected duration of well clean-up and testing, and target gas flow rates.

Emissions were estimated using methods and emission factors from the National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008 (NGER Determination) (as updated in 2025).

Indirect GHG Emissions

Indirect emissions associated with the Activity include emissions resulting from the materials (only major contributors - the embodied carbon of cement and steel have been included) and others (including helicopters, flights, car travel and trucking).

Embedded emissions associated with materials were estimated based on the expected quantity of materials consumed during the Activity and emission factors sourced from the Inventory of Carbon and Energy (ICE Database) (Circular Ecology 2023).

Emissions associated with transportation of materials and people were estimated based on the travel distance and expected number of trips. Emission factors for each fuel type were sourced from the NGER (Measurement) Determination 2008 as updated in 2025.

No production of hydrocarbons is proposed as part of this EP. Therefore, there are no indirect emissions associated with the gas processing at the onshore Athena Gas Plant or with the transport or end use of hydrocarbons.

Total GHG Emissions

Table 6-9 summarises the total direct and indirect GHG emissions for the Activity. The direct emissions for the Activity are estimated to be ~9.3 kt CO_2-e over the Activity life, and the indirect emissions attributed to the materials, helicopter, and trucking, are estimated to be 16.2 kt CO_2-e.

NB: GHG emissions from waste are predicted to be immaterial and therefore have not been included in the GHG estimate.

Table 6-9: Total GHG emissions for the Activity

Emissions Source	**Emissions Scope**	**kT CO_2-e**
MODU	Direct	2.6
Flaring	Direct	6.7
Vessels	Indirect	12.9
Materials[1]	Indirect	2.2
Others (transport of people and materials)	Indirect	1.1
Total[2]	Direct and Indirect	25.5
Note: [1]*Accounted for the embodied carbon in the required cement, steel, drill mud and drill fluids only.* [2]*The emissions calculated for the Activity are expected to be within the range +/- 30%, excluding any substantial changes to emission factors.*		

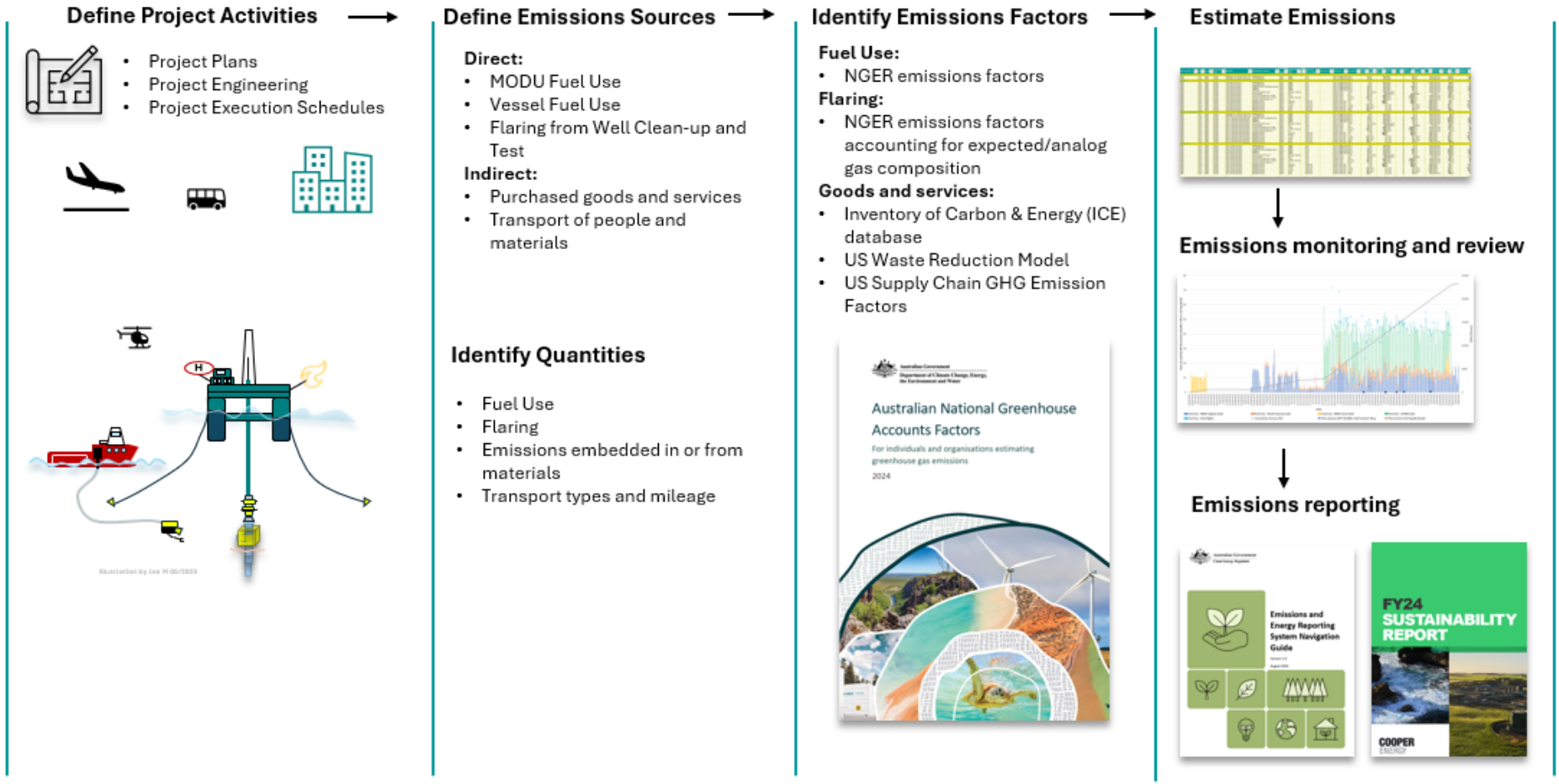


Figure 6-8: Emissions Estimation, Monitoring and Reporting Workflow

6.4.3 Predicted Environmental Impacts and Risks

The predicted environmental impacts from GHG emissions are:

- increase in GHG emissions

Potential risk:

- change in climate systems
- change in ecosystem
- change in socio-economic factors.

6.4.4 Impact and Risk Evaluation

6.4.4.1 Impact: Increase in GHG Emissions

GHGs absorb longwave radiation reflected from the earth's surface thereby trapping heat within the earth's atmosphere and contributing to the greenhouse effect. While the emissions from the Activity add to the GHG load in the atmosphere resulting in global warming potential, they are small on a state and national scale.

Following the updated Nationally Determined Contribution (NDC) in June 2022, Australia committed to reduce GHG emissions to 43% below 2005 levels by 2030 and reaffirmed its target to achieve net zero emissions by 2050. These targets are legislated under the *Climate Change Act 2022* (Cwth).

Based on forecasting conducted by the DCCEEW in 2024, the Commonwealth Government has forecasted the annual carbon budget including a scenario called 'with additional measures' that includes policies and measures in place at the time of publication. This includes the Safeguard Mechanism reforms and the 82% renewable energy target in Australia's electricity grid by 2030 (DCCEEW 2024e).

Carbon budgets under current policy settings can be developed for Australia with the following approach:

- For Australian carbon budget: by summing the annual projected emissions of the 'with additional measures' scenario up to 2030 (DCCEEW 2024e).
- For the duration of the activity (2026-2028), the total direct and indirect GHG emissions from the Activity are estimated to be approximately 0.002% of the Australian carbon budget for the duration of the Activity.

The predicted level of impact, i.e., the consequence, of GHG emissions as a result of the Activity is evaluated to be **Level 1**, based on:

- The low levels of contribution to the Australian carbon budget (0.002%).
- Amplitude Energy having a robust emissions reduction process to monitor and address legislative requirements, and enable a systematic process to identify, assess and implement GHG emissions reduction opportunities, meaning the Activity's direct emissions will continue to be aligned with Australia's GHG emissions commitments.
- Since FY20 Amplitude Energy has been certified carbon neutral by Climate Active in respect of its scope 1, scope 2 and relevant scope 3 emissions on an equity share basis2. This voluntary process includes calculating emissions, developing and implementing an emissions reduction strategy and

[2] See Amplitude Energy's 2023 Sustainability Report for detail.

using carbon offsets to compensate for the remaining emissions. The certification requires independent technical assessment and verification and ultimately gives Amplitude Energy a detailed understanding of its emissions profile and provides a real cost of carbon for its business activities. Evidence of independent verification of Amplitude Energy's calculation, reporting, and surrender of carbon credit units is publicly available through certification provided by Climate Active which is available on the Climate Active website.

6.4.4.2 Risk: Change in Climate Systems

The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) Working Group I was released in August 2021. The IPCC states with high confidence that many extreme heat events and global surface temperature rise would not have occurred without human influence and could be irreversible for several decades to millennia (IPCC 2021).

This is reiterated in the AR6 Synthesis Report released in March 2023, "[H]uman activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020. Global greenhouse gas emissions have continued to increase over 2010-2019, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and between individuals (high confidence). Human-caused climate change is already affecting many weather and climate extremes in every region across the globe" (IPCC 2023).

According the AR6 Synthesis Report, heat extremes (including heatwaves) have become more frequent and more intense across most land regions since the 1950s while cold extremes have become less frequent and less severe. Marine heatwaves have approximately doubled in frequency since the 1980s. The frequency and intensity of heavy precipitation events have increased since the 1950s over most land areas for which observational data are sufficient for trend analysis. It is likely that the global proportion of major (Category 3–5) tropical cyclone occurrence has increased over the last four decades (IPCC 2023).

The State of the Climate 2024 (BoM and CSIRO 2024) reported that Australia's climate warmed by an average of 1.51 ± 0.23°C between 1910 and 2023[3], reflecting global warming trends. This warming trend has been accompanied by a shift towards drier conditions in southern Australia and wetter conditions in northern Australia. Additionally, the frequency and/or intensity of some extreme weather events, including heat waves and short-term heavy rainfall events are also anticipated to increase with potential consequences to human health and impacts on biodiversity and ecosystems. Conversely, a downward trend in the number of tropical cyclones has been observed since 1982 (BoM and CSIRO 2024). Average sea surface temperature in the Australian region has warmed by 1.08°C since 1900, with nine of the 10 warmest years on record occurring since 2010, associated with longer and more frequent marine heatwaves (BoM and CSIRO 2024). A warming ocean affects the global ocean and atmospheric circulation, the cryosphere, global and regional sea levels, and causes losses in dissolved oxygen, impacts on marine ecosystems (BoM and CSIRO 2024), including changes to species abundance, community structure and increased frequency and intensity of thermally induced coral bleaching events (CSIRO 2017).

The predicted level of impact, i.e., the consequence, of an impact on climate systems from an increase in GHG emissions as a result of the Activity is evaluated to have a consequence of **Level 1**, based on:

[3] It is important to note that this 1.5°C warming above 1910 temperatures does not necessarily reflect that the 1.5°C threshold of the Paris Agreement has been exceeded. The IPCC AR6 Report defines that an exceedance of this threshold should be in relation to a 20-year temperature average.

- The low levels of contribution to Australian carbon budget (0.002%).
- Amplitude Energy having a robust emissions reduction process to monitor and address legislative requirements, and enable a systematic process to identify, assess and implement GHG emissions reduction opportunities across the business, meaning the Activity direct emissions will continue to be aligned with Australia's GHG emissions commitments.

  Since FY20 Amplitude Energy has been certified carbon neutral by Climate Active in respect of its' scope 1, scope 2 and relevant scope 3 emissions on an equity share basis4. This voluntary process includes calculating emissions, developing and implementing an emissions reduction strategy and using carbon offsets to compensate for the remaining emissions. The certification requires independent technical assessment and verification and ultimately gives Amplitude Energy a detailed understanding of its emissions profile and provides a real cost of carbon for its business activities.

6.4.4.3 Risk: Change in Ecosystem Dynamics

Ecosystems that are particularly susceptible to adverse effects of climate change include alpine habitats, coral reefs, wetlands and coastal ecosystems, polar communities, tropical forests, temperate forests and arid and semi-arid environments (DoEE 2019). In Australia, this includes coral reefs, alpine regions, rainforests, arid and semi-arid environments, mangroves, grasslands, temperate forests and sclerophyll forests. Future climate change (increased temperature and decreased, but more variable rainfall) has the potential to have a range of impacts on ecological factors and threaten biodiversity in the Australian Mediterranean ecosystem (CSIRO 2017).

Redistribution and reorganisation of natural systems, driven by climate change is a major threat to biodiversity (Chapman et al. 2020). A report by Australia's Biodiversity and Climate Change Advisory Group summarises the potential impacts of climate change to marine and terrestrial species, habitats, and ecosystems across Australia (Steffen et al. 2009). The impacts to taxa are outlined in Table 6-10 and the impacts to ecosystems in Table 6-11.

Extensive modelling and monitoring studies over the last twenty years provide considerable evidence that climate change is already affecting and will continue to affect species globally (Hoegh-Guldberg et al. 2018) however, these impacts are likely to be highly species-dependent and spatially variable. The most frequently observed and cited ecological responses to climate change include species distributions shifting towards the poles, upwards in elevation and shifts in phenology (Dunlop et al. 2012). Climate change may not only change species distributions but also life-history traits such as migration patterns, reproductive seasonality and sex-ratios (Table 6-10).

Impacts of climate change such as altering temperature, rainfall patterns and fire regimes are likely to lead to changes in vegetation structures across terrestrial ecosystems within Australia (Table 6-11; Dunlop et al. 2012). Increases in fire regimes will impact Australian ecosystems altering composition structure, habitat heterogeneity and ecosystem processes. Changes in climate variability, as well as averages, could also be important drivers of altered species interactions, both native and invasive species (Dunlop et al. 2012). Climate change could result in significant ecosystem shifts, as well as alterations to species ranges and abundances within those ecosystems (Hoegh-Guldberg et al. 2018).

The IPCC Special Report describes impacts of warming above pre-industrial levels to key receptor groups including terrestrial ecosystems, mangroves, warm-water corals, unique and threatened systems, and arctic regions (Hoegh-Guldberg et al. 2018). These receptor groups show varying sensitivity to warming conditions, with a range of responses shown at 1°C warming; from corals suffering moderate impacts, to mangroves not showing any detectable impacts that can be

[4] See Amplitude Energy's 2023 Sustainability Report for detail.

attributed to climate change (Hoegh-Guldberg et al. 2018). Once warming reaching 1.5°C, all receptor groups show impacts attributable to climate change with severity ranging from moderate impacts that are detectable and attributable to climate change (mangroves), to impacts that are severe and widespread (warm-water corals) (Hoegh-Guldberg et al. 2018). At the point where global temperature rise, due to climate change, reaches 2°C, increasing numbers of receptor groups suffer impacts which are high to very high, and likely to be irreversible (terrestrial ecosystems, warm-water corals, unique and threatened systems, and arctic regions) (Hoegh-Guldberg et al. 2018).

The State of the Environment (SoE) report is produced every five years by the Australian Government as a comprehensive review on the state of the Australian environment. The most recent report was released in July 2022 (DCCEEW 2021). The SoE concluded that climate change and extreme weather events were impacting the Australian environment and especially impacting various taxa (DCCEEW 2021). In many cases, the impacts of climate change on biodiversity are exacerbated by other pressures such as land clearing and invasive species, but in some cases, impacts can be unequivocally attributed to climate change. A summary of the SoE impacts from climate change is provided in Table 6-12.

Terrestrial Ecosystems

All terrestrial ecosystems are likely to be impacted by a changing climate Table 6-11, Steffen et al. 2009, Hughes 2011, Dunlop et al. 2012, Hoegh-Guldberg et. al. 2018). The predicted impact of climate change on these ecosystems is highly variable, both between ecosystems and within individual ecosystems (Dunlop et al. 2012). Below is a summary of potential climate change impacts to two key terrestrial ecosystems – tropical rainforests and alpine/montane areas, where other terrestrial ecosystems can be found summarised in Table 6-11.

Tropical Rainforest

Projections of future climate change in the wet tropics of Australia under different scenarios are outlined by McInnes (2015). It is likely that temperatures in the wet tropics will become hotter and potentially fire and cyclones will be more intense. Consequently, there is an increased probability of fires penetrating into rainforest vegetation resulting in a shift from fire-sensitive vegetation to communities dominated by fire-tolerant species; and changing rainforest disturbance regime as cyclones become more intense (Hughes 2011, Steffen et al. 2009). Changes in the timing of seasons (i.e., extended summers) could cause change in the seasonal response of plants, and alterations to species ranges and abundances (Hoegh-Guldberg et al. 2018).

Alpine/Montane Areas

Alpine systems are generally considered to be among the most vulnerable to future climate change (Hughes 2003). The extent of true alpine habitat in Australia is very small (0.15% of Australian land surface) with limited high-altitude refuge (Hughes 2003). Australian alpine regions are home to a variety of alpine vertebrates who rely on snow cover for their survival. There is evidence of a reduction in populations of dusky antechinus, broad-toothed rats, and the mountain pygmy possum. The first two species are active under the snow throughout the winter season and are therefore subject to increased predation by foxes when snow is reduced (Hughes 2003).

Marine Ecosystems

Average sea surface temperature in the Australian region has warmed by 1.05°C since 1900, with eight of the 10 warmest years on record occurring since 2010 (BoM and CSIRO 2022). A warming ocean affects the global ocean and atmospheric circulation, the cryosphere, global and regional sea levels, and causes losses in dissolved oxygen, impacts on marine ecosystems (BoM and CSIRO 2022), including changes to species abundance, community structure and increased frequency and intensity of thermally induced coral bleaching events (CSIRO 2017).

Oceanic warming has also served to alter ocean currents around Australia. In response to both ocean warming and stratospheric ozone depletion, the East Australian Current has increased in strength by about 20% between 1978 and 2005 (Cai and Cowan 2006). Sea surface temperatures are projected to continue to increase, with estimates of warming in the Southern Tasman Sea of between 0.6°C to 0.9°C and between 0.3°C to 0.6°C elsewhere along the Australian coast by 2030 (Church et al. 2006).

Global mean sea level increased by 0.20 m between 1901 and 2018. The average rate of sea level rise was 1.3 mm/year between 1901 and 1971, increasing to 1.9 mm/year between 1971 and 2006, and further increasing to 3.7 mm/ year between 2006 and 2018. Human influence was very likely the main driver of these increases since at least 1971 (IPCC 2023).

Global mean sea level is predicted to rise between 0.18 m and 0.23 m by 2050, and between 0.38 m and 0.77 m by 2100 (IPCC 2021). This global mean sea level rise is primarily caused by thermal expansion and mass loss from glaciers and ice sheets, with minor contributions from changes in land-water storage. Global mean sea level will continue to increase for centuries to millennia due to continuing deep ocean warming and ice sheet melt, and sea levels will remain elevated for thousands of years, at rates dependent on future emissions (IPCC 2023). This will lead to some coastal inundation affecting mangroves, salt marshes and coastal freshwater wetlands. Furthermore, as CO2 is gradually absorbed by oceans and fresh water, the water becomes more acidic, which increases the solubility of calcium carbonate, the principal component of the skeletal material in aquatic organisms (Steffen et al. 2009).

Below is a summary of potential climate change impacts to two key marine ecosystems - mangroves and coral reefs, other marine ecosystems are summarised in Table 6-11.

Mangroves

Mangrove ecosystems in Australia will face higher temperatures, increased evaporation rates and warmer oceans (McInnes 2015) as well as an associated sea level rise (Hoegh-Guldberg et al., 2018). Modelling indicates an increased likelihood of future severe and extended droughts across parts of Northern Australia (Dai 2013). Consequently, mangrove ecosystems may increase their southern range as a result of warmer temperatures.

However, higher temperatures and evaporation rates, and extended droughts could lead to die-offs in Northern Australia and a change in mangrove distribution and abundance (Duke et al. 2017). Mangrove systems should cope with rising sea levels by accumulating more peat or mud which will give them the opportunity to adjust to a rising sea level (Field 1995).

Coral Reefs

Climate change has emerged as a threat to coral reefs, with temperatures of just 1°C above the long-term summer maximum for an area over 4-6 weeks being enough to cause mass coral bleaching and mortality (Baker et al., 2008, Hughes et al. 2018, Spalding and Brown 2015). Coral mortality or die off following coral bleaching events can stretch across thousands of square kilometres of ocean (Gilmour et al. 2016, Hoegh-Guldberg 1999, Hughes et al. 2018). The impacts associated with a warming ocean, coupled with increasing acidification, are expected to undermine the ability of tropical coral reefs to provide habitat for fish and invertebrates, which together provide a range of ecosystem services such as food, livelihoods and coastal protection (Hoegh-Guldberg et al., 2018). Coral reefs are projected to decline by 70–90% as a result of 1.5°C of global warming (IPCC 2023).

Table 6-10: Overview of Impacts of Climate change to the Future Vulnerability of Particular Taxa (modified after Steffen et al., 2009)

Taxa	Potential Vulnerability
Mammals	Narrow-ranged endemics susceptible to rapid climate change in-situ; changes in competition between grazing macropods in tropical savannas mediated by changes in fire

Taxa	Potential Vulnerability
	regimes and water availability; herbivores affected by decreasing nutritional quality of foliage as a result of CO_2 fertilisation.
Avifauna	Changes in phenology of migration and egg-laying; increased competition of resident species; breeding of waterbirds susceptible to reduction; top predators vulnerable to changes in food supply; rising sea levels affecting avifauna that nest on sandy and muddy shores, saltmarshes, intertidal zones, coastal wetlands, and low-lying islands; saltwater intrusion into freshwater wetlands affecting breeding habitat.
Reptiles	Warming temperatures may alter sex ratios of species with environmental sex determination to cope with warming in-situ.
Amphibians	Frogs may be the most at-risk terrestrial taxa. Amphibians may experience altered interactions between; pathogens, predators, and fires.
Fish	Freshwater species vulnerable to reduction in water flows and water quality; limited capacity for freshwater species to migrate to new waterways; all species susceptible to flow-on effects of warming on the phytoplankton base of food webs.
Invertebrates	Expected to be more responsive than vertebrates due to short generation times, high reproduction rates and sensitivity to climatic variables.
Plants	Climate change may impact various functional dynamics of plants due to changes in; increasing CO_2, fires, plant phenology and specific environmental characteristics.

Table 6-11: Projected Impacts of CO2 Rise and Climate Change on Australian Ecosystems (modified after Steffen et al. 2009)

Key Component of Environmental Change	Projected Impacts of Ecosystems
Coral Reefs	
CO_2 increases leading to increased ocean acidity	Reduction in ability of calcifying organisms, such as corals, to build and maintain skeletons.
Sea surface temperature increases, leading to coral bleaching	If frequency of bleaching events exceeds recovery time, reefs will be maintained in an early successional state or be replaced by communities dominated by macroalgae.
Oceanic Systems (including planktonic systems, fisheries, sea mounts and offshore islands)	
Ocean warming	Many marine organisms are highly sensitive to small changes in average temperature (1-2°C), leading to effects on growth rates, survival, dispersal, reproduction and susceptibility to disease.
Changed circulation patterns, including increase in temperature stratification and decrease in mixing depth, and strengthening of the East Australia Current (EAC)	Distribution and productivity of marine ecosystems is heavily influenced by the timing and location of oceanic currents; currents transfer the reproductive phase of many organisms. Climate change may suppress upwelling in some areas and increase it in others, leading to shifts in location and extent of productivity zones.
Changes in ocean chemistry	Increasing CO_2 in the atmosphere is leading to increased ocean acidity and a concomitant decrease in the availability of carbonate ions.
Estuaries and Coastal Fringe (including benthic, mangrove, saltmarsh, rocky shore, and seagrass communities)	
Sea level rise	Landward movement of some species as inundation provides suitable habitat, changes to upstream freshwater habitats will have flow-on effects to species.
Increase in water temperature	Impacts on phytoplankton production will affect secondary production in benthic communities.

Key Component of Environmental Change	Projected Impacts of Ecosystems
Savannas and Grasslands	
Elevated CO2	Shifts in competitive relationships between woody and grass species due to differential responses.
Increased rainfall in north and northwest regions	Increased plant growth will lead to higher fuel loads, in turn leading to fires that are more intense, frequent and occur over larger areas.
Tropical Rainforests	
Potential increases in frequency and intensity of fires	Increased probability of fires penetrating into rainforest vegetation resulting in shift from fire-sensitive vegetation to communities dominated by fire-tolerant species.
Warming and changes in rainfall patterns	Potential increases in productivity in areas where rainfall is not limiting; reduced forest cover associated with soil drying projected for some Australian forests.
Inland Waterways and Wetlands	
Reduction in precipitation, increased frequency and intensity of drought	Reduced river flows and changes in seasonality of flows.
Changes in water quality, including changes in nutrient flows, sediment, oxygen and CO_2 concentration	May affect eutrophication levels, incidence of blue-green algal outbreaks.
Sea level rise	Saltwater intrusion into low-lying floodplains, freshwater swamps and groundwater; replacement of existing riparian vegetation by mangroves.
Arid and Semi-arid Regions	
Increasing CO_2 coupled with drying in some regions	Interaction between CO_2 and water supply critical, as 90% of the variance in primary production can be accounted for by annual precipitation.
Shifts in seasonality of intensity of rainfall events	Any enhanced runoff redistribution will intensify vegetation patterning and erosion cell mosaic structure in degraded areas. Changes in rainfall variability and amount will also impact on fire frequency. Dryland salinity could be affected by changes in the timing and intensity of rainfall.
Warming and drying, leading to increased frequency and intensity of fires	Reduction in patches of fire-sensitive mulga in spinifex grasslands potentially leading to landscape-wide dominance of spinifex.
Alpine and Montane Areas	
Reduction in snow cover depth and duration	Potential loss of species dependent on adequate snow cover for hibernation and protection from predators; increased establishment of plant species at higher elevations as snowpack is reduced.

Table 6-12: Summary of SoE Report Conclusions on Climate Change Impacts

Taxa	Potential Vulnerability
Mammals	Terrestrial mammals are subject to ongoing population declines due to climate change and changes within habitats
Avifauna	There is strong evidence of population declines in threatened avifauna species, waterbirds and migratory birds. Various extensive and persistent impacts contribute to declines, including climate change (particularly drought) and extreme events, habitat degradation, and invasive predators.

Taxa	Potential Vulnerability
Reptiles	Reptile species in all areas of Australia have an increasing risk of extinction. Risk of extinction was recognised as primarily related to ongoing pressure from invasive predators, but compounded by pressure from habitat modification, climate change (particularly drought) and disease. Half of Australian freshwater turtle species are in drastic population decline due to climate change.
Amphibians	Droughts and fires are increasing pressures within habitats that impact amphibian species. The number of known threatened amphibian species, including those that are Critically Endangered in Australia, is increasing. Drought and fire are recognised as increasing pressures contributing to this decline.
Fish	Freshwater fish throughout Australia have more than a 50% risk of extinction in the next 20 years due to climate change and changes within freshwater habitats.
Invertebrates	Most threatened invertebrates are suffering from largescale habitat degradation and loss of biodiversity. Changes in regional temperature, humidity and rainfall impact their distribution, development and reproduction.
Plants	Habitat destruction is the leading cause of vulnerability within plant species. However, changes in temperature, rainfall and fire regimes are contributing threats to plant species. Alpine ecosystems and biodiversity in Australia are particularly vulnerable to climate change that affects snow depth and the spatial and temporal extent of snow, which have all declined since the late 1950s.

The predicted level of impact, i.e., the consequence, of an impact on ecosystems from an increase in GHG emissions as a result of the Activity is evaluated to have a consequence of **Level 1**, based on:

- The low levels of contribution to the Australian carbon budget (0.002%).
- Given the minor contribution to carbon budgets, the indirect emissions are not a substantial cause of the physical effects of climate change on MNES. Therefore, these physical effects are not considered impacts, as per s527E of the EPBC Act.
- Amplitude Energy having a robust emissions reduction process to monitor and address legislative requirements, and enable a systematic process to identify, assess and implement GHG emissions reduction opportunities across the business, meaning the projects direct emissions will continue to be aligned with Australia's GHG emissions commitments.

  Since FY20 Amplitude Energy has been certified carbon neutral by Climate Active in respect of its' scope 1, scope 2 and relevant scope 3 emissions on an equity share basis5. This voluntary process includes calculating emissions, developing and implementing an emissions reduction strategy and using carbon offsets to compensate for the remaining emissions. The certification requires independent technical assessment and verification and ultimately gives Amplitude Energy a detailed understanding of its emissions profile and provides a real cost of carbon for its business activities. Evidence of independent verification of Amplitude Energy's calculation, reporting, and surrender of carbon credit units is publicly available through certification provided by Climate Active which is available on the Climate Active website.

[5] See Amplitude Energy's 2023 Sustainability Report for detail.

6.4.4.4 Risk: Change in Socio-economic Factors

Changes to climate can result in an impact to social receptors that have values which include the ecological receptors previously discussed. This includes KEFs and AMPs. Climate change also impacts on the functions, interests or activities of other users which rely on ecological values, including commercial and recreational fisheries and tourism.

The social receptors that may be impacted in the region of this activity are discussed in Section 4.4.3.

The predicted level of impact, i.e., the consequence, of an impact on socio-economic factors from an increase in GHG emissions as a result of the Activity is evaluated to have a consequence of **Level 1**, based on:

- The low levels of contribution to the Australian carbon budget (0.002%).
- Given the minor contribution to carbon budgets, the indirect emissions are not a substantial cause of the physical effects of climate change on MNES. Therefore, these physical effects are not considered impacts, as per s527E of the EPBC Act.
- Amplitude Energy having a robust emissions reduction process to monitor and address legislative requirements, and enable a systematic process to identify, assess and implement GHG emissions reduction opportunities across the business, meaning the projects direct emissions will continue to be aligned with Australia's GHG emissions commitments.

  Since FY20 Amplitude Energy has been certified carbon neutral by Climate Active in respect of its' scope 1, scope 2 and relevant scope 3 emissions on an equity share basis[6]. This voluntary process includes calculating emissions, developing and implementing an emissions reduction strategy and using carbon offsets to compensate for the remaining emissions. The certification requires independent technical assessment and verification and ultimately gives Amplitude Energy a detailed understanding of its emissions profile and provides a real cost of carbon for its business activities. Evidence of independent verification of Amplitude Energy's calculation, reporting, and surrender of carbon credit units is publicly available through certification provided by Climate Active which is available on the Climate Active website.

6.4.5 Control Measures, ALARP, and Acceptability Assessment

Table 6-13 provides a summary of the control measures and ALARP and acceptability assessment relevant to GHG emissions.

Table 6-13: GHG Emissions ALARP, Control Measures and Acceptability Assessment

GHG Emissions	
ALARP Decision Context and Justification	ALARP Decision Context: **Type A** Impacts from GHG emissions are well understood. The potential impacts associated with Amplitude Energy Development Activities are assessed as Low. Good practice is defined, and uncertainty is minimal. There are no conflicts with company values, no significant partner or media interests. The climate is influenced by the concentration of GHG emissions in the atmosphere. Amplitude Energy has a detailed understanding of its emissions profile. Given this, Amplitude Energy applies ALARP Decision Context A.
Control Measure	Source and Description of Control

[6] See Amplitude Energy's 2023 Sustainability Report for detail.

GHG Emissions	
CM03: Marine Assurance Process	Vessels will comply with Marine Orders – Part 97: Marine Pollution Prevention – Air Pollution (appropriate to vessel class) for emissions from combustion of fuel including: • Hold a valid International Air Pollution Prevention (IAPP) certificate and have a current international energy efficiency certificate. • Have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI. • Engine NOx emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI. • Sulphur content of diesel/fuel oil complies with Marine Order Part 97 and Regulation 14 of MARPOL 73/78 Annex VI.
CM08: Planned Maintenance System	Power generation on vessels and the MODU will be operated in accordance with manufacturer's instructions and ongoing maintenance to ensure efficient operation, and thereby GHG emissions reduced to ALARP.
Additional Control Measures Considered	
Use alternative fuels	Reject Potential to reduce the emissions associated with the combustion of fossil fuels, however, no other alternative fuel sources are currently commercially viable for larger vessels or helicopters. The cost to transition to alternatives fuels is grossly disproportionate to the benefits gained.
Use of non-hydrocarbon powered vessels	Reject Currently it would not be commercially viable to implement this measure for the activities discussed in this EP as vessels that do not use hydrocarbon are not common in Australian waters. To bring vessels into Australia to support activities is an increased cost. The overall reduction in emissions (and therefore benefit) from bringing vessel into Australia is relatively small.
Eliminate flaring as an activity	Reject Eliminating flaring as an activity would reduce GHG emissions, however, well testing is a central component of the activity and will allow Amplitude Energy to evaluate reservoir characteristics.
Cease flaring upon meeting clean-up and test criteria, and before exceeding a rate of 60 MMscf/day or duration of 36 hours of flaring	Adopt (CM07) Clean-up and flowback criteria will be defined within the flowback program. The flowback criteria will establish the rates and volumes to be produced from the well to gather sufficient information to characterise the reservoir and fluid, and clean-up the well. Flow from the well will cease once sufficient information has been gathered. Flared volumes of gas will not exceed a rate of 60 MMscf/day, or duration of 36 hours.
Use of 'High combustion efficient flare' for flaring operations	Adopt (CM07) A burner which atomises hydrocarbons to yield smoke free combustion. The use of a flare with higher efficiency, will also result in less unburnt methane thereby reducing GHG emissions. Operational and logistical costs of equipment and implementation are feasible.
Conduct wireline extended reservoir evaluation (instead of well test)	Reject The extended wireline technique for reservoir evaluation would replace well testing and reduce GHG emissions, however this technique is utilised for well deliverability and not data gathering and therefore is not feasible for clean-up and flowback.

GHG Emissions	
Impact and Risk Summary	
Residual Impact Consequence	**Level 1** - Localised short-term impacts to receptors with no remedial actions or recovery required.
Residual Risk Consequence	**Level 1** - Localised short-term impacts to receptors with no remedial actions or recovery required.
Likelihood	**Possible (C)** - Could happen when additional factors are present. Easy to postulate a scenario for the occurrence but considered doubtful
Residual Risk	Low
Demonstration of Acceptability	
Principles of ESD	GHG emissions is evaluated as having Level 1 risk consequence which is not considered as having the potential to result in serious or irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required.
Legislative and Conventions	Legislation and other requirements considered as relevant control measures include: • Climate Change Act 2022 (Cwth) • National Greenhouse and Energy Reporting Act 2007 (Cwth) • Paris Agreement
Internal Content	Relevant management system processes adopted to implement and manage hazards to ALARP include: • Risk Management (MS03) • Technical Management (MS08) • Health Safety and Environment Management (MS09) • Supply Chain and Procurement Management (MS11) • External Affairs & Stakeholder Management (MS05) • Activities will be undertaken in accordance with the Implementation Strategy (Section 11.0).
External Context	Activity will be undertaken in a manner consistent with relevant legislation, industry standards and guidelines, offshore practices and benchmarking. The activity is not predicted to result in impacts to species that would be inconsistent with recovery plans or conservation advice.
Other Requirements	No objections or claims have been raised related to these impacts during consultation.
Demonstration of meeting the defined acceptable levels in the OPP	Section 8.5.6 of the **East Coast Supply Project OPP** demonstrates the acceptability of impacts and risks associated with GHG emissions. This acceptability demonstration is also valid and appropriate for the Activity (given this Activity is described and assessed in the OPP) and is supported by further evaluation against the acceptability factors as detailed above. Impacts and risks associated with the Activity are expected to be below the defined acceptable levels as described in the OPP by meeting the additional acceptability criteria described in Section 5.2.4.3, such as that for GHG emissions: • OPP EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • OPP control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence, likelihood and residual risk are the same as those defined in the OPP.

GHG Emissions	
	• No changes to internal or external context as defined in the OPP including no additional objections and claims were raised against this aspect.
Acceptability Outcome	Acceptable Amplitude Energy has determined that impacts and risks related to GHG emissions are acceptable, based on: • The planned management of impacts and risks integrates Amplitude Energy internal requirements, including relevant management system processes. • The activities will be managed in a way that is not inconsistent with the relevant principles of ESD. • The proposed controls and impact and risk levels are not inconsistent with national and international standards, laws, and policies including applicable plans for management and conservation advice, and significant impact guidelines for MNES. • No claims or objections were raised during consultation that would inform the values and sensitivities /existing environment, impacts and risks, performance outcomes or mitigation measures. To manage impacts to receptors to or below the defined acceptable levels the following EPOs have been applied: EPO13: GHG emissions related to the Activity, including (scope 1 [Inside Project Boundary], scope 1* [Outside Project Boundary] and scope 3) emissions are consistent with Australia's international GHG emissions commitments, as outlined in the Climate Change Act 2022. Emissions are to be determined based on the NGER scheme and managed by the Safeguard Mechanism.

6.5 Underwater Sound Emissions - Impulsive

6.5.1 Cause of Aspect

Sources of impulsive underwater sound emissions that will occur as a result of the Activity are identified in Table 6-14 and described in further detail in subsections below. The introduction of impulsive underwater sound emissions may temporarily elevate ambient underwater sound levels in the marine environment.

Table 6-14: Activities that will Generate Impulsive Underwater Sound Emissions

Aspect / Phase	Activity component
Well construction	Logging while Drilling (LWD)
MODU positioning	Positioning - transponders
ROV / AUV operations	Positioning - USBL
Contingent activities	Environmental surveys

6.5.2 Aspect Characterisation

6.5.2.1 Well Construction

Logging while drilling (LWD) and logging via wireline (if required) may use acoustic transducers to transmit localised and temporary impulsive sound into the rock surrounding the near wellbore, from

a device lowered around 2 km below the seabed. Well logging is expected to take up to 24-48 hours for wireline operations and 5-10 days for LWD operations.

There is no Vertical Seismic Profiling (VSP) avoiding introduction of associated higher intensity impulsive noise (see Section 3.4.3.7 for further details).

Noise from logging activities is not anticipated to be audible within the overlying ocean. Studies which have recorded sound during a range of drilling and logging activities did not identify a discernible increase in subsea noise levels over general vessel noise when logging was underway (Jimenez-Arranz 2020). Logging, therefore, is not assessed further.

6.5.2.2 MODU Positioning

Transponders may be used during the Activity to assist with the positioning of the infrastructure and equipment (see Section 3.4.1 for further details). When required, transponders will introduce localised and temporary impulsive sound into the marine environment. General positioning will emit one chirp every 5 seconds (estimated to be required for 4 hours at a time) and precise positioning will emit one chirp every second (estimated to be required for 2 hours at a time). The chirps are short in duration between 3 and 40 milliseconds. Transponders will not emit any sound when on standby. Austin et al. (2012) calculated the distances to SPL isopleths for a typical USBL system in open water and found the distance to 160 dB re 1 µPa (SPL) to be 36 m, and thus incidental to, and lower than underwater noise from other project impulsive and continuous noise sources.

A USBL system uses transponders to receive the acoustic signal sent out by the system's transceiver. As such, the sound source levels of a USBL assessed in Section 6.5.2.3 are considered a suitable analogue for a transponder that will be used during the positioning activities of the Activity.

6.5.2.3 ROV / AUV Operations

USBL positioning systems use high frequency-short-range acoustic signals. The signals are produced by a small battery-operated beacon. These may be attached to ROVs, deployed by ROVs to subsea equipment and the seabed. The USBL system sends / receives and interprets signals in real time to establish precise locations of equipment and vessels. The sound source levels of a USBL are detailed in Section 6.5.2.4.

6.5.2.4 Environmental Surveys (Contingent)

Environmental surveys have been included as a contingent activity. In the event they are required, the surveys will introduce localised and temporary impulsive sound into the marine environment. Environmental surveys may utilise techniques which use acoustics that direct short, pulsed sound towards the seabed, such as, MBES, SSS, SBP, CTD, USBL and SVP (see Section 3.4.3.9 for further details).

MBES is used to obtain detailed 3-dimensional (3D) maps of the seafloor and to gather data on water depths over the surveyed area. The equipment is most commonly mounted on survey vessels and measures water depth by recording the two-way travel time of a high frequency pulse emitted by a transducer. The beams produce a fanned arc composed of individual beams (also known as a swathe). MBES is typically operated at frequencies above 200 kHz (Table 6-15) and is therefore outside the hearing range of most cetaceans and pinnipeds and will only impact marine fauna capable of hearing higher frequencies.

SSS is used to generate an accurate image of the seabed, which may include 3D imagery to map seabed features. The equipment is typically towed or mounted to an ROV. An acoustic beam is used to obtain an accurate image of a narrow area of seabed to either side of the instrument by

measuring the amplitude of back-scattered return signals. Like MBES, this equipment is also typically operated at a high frequency range and therefore will likely only impact marine fauna capable of hearing higher frequencies.

As described in Section 6.5.2.3, USBL systems are used to determine the positioning of equipment and vessels. Austin *et al*. (2012) calculated the distances to SPL isopleths for a typical USBL system in open water and found the distance to 160 dB re 1 µPa (SPL) to be 36 m, and thus incidental to, and lower than underwater noise from other project impulsive and continuous noise sources.

SVP and CTD techniques are anticipated to have sound source levels like MBES given the operation principle is similar to an echosounder (Makar 2022) (Table 6-15).

SBP is a common survey technique and generates sound across a frequency range that overlaps the hearing range of potential receptors from low frequency cetaceans (baleen whales) to high frequency cetaceans (dolphins). Other described impulsive sources have no or minimal frequency overlap with the hearing range of low frequency cetaceans. SBP has comparable impulsive source levels to other survey techniques included within the EP. Considering the source levels and lower frequency range of SBP compared to other impulsive sound sources described (Table 6-15); given SBP is expected to have a higher potential to propagate through the open ocean compared to the other impulsive sound sources described SBP has been used as the basis of the impact assessment and detailed evaluation.

Table 6-15: Positioning and Survey Equipment Source Frequencies and Sound Levels (Welch et al. 2023)

Emission Source	Typical Equipment Model	Sound Frequency Range	Source Sound Level
MBES	R2Sonic 2024 Reson SeaBat 8101	200–400 kHz	SPL: 221 dB re 1 µPa @ 1 m SEL_{SS}: 130 dB re 1 μPa^2s @ 40 m PK: 170 dB re 1 µPa @ 40 m
SSS	EdgeTech 4200	70–400 kHz	SPL: 205 dB re 1 µPa @ 1 m SEL_{SS}: 176 dB re 1 μPa^2s @ 1 m PK: 210 dB re 1 µPa @ 1 m
SBP	CHIRP - Applied Acoustics AA301	2–16 kHz	SPL: 203.3 dB re 1 µPa @ 1 m SEL_{SS}: 172.6 dB re 1 μPa^2s @ 1 m
	Boomer - Applied Acoustics AP3000	100-1,000 Hz	SPL: 191.7 dB re 1 µPa PK: 215 dB re 1 μPa^2m^2
USBL	USBL: Sonardyne Ranger	18–36 kHz	SPL: 204 re 1 µPa @ 1m SEL_{SS}: 173 re 1 µPa @ 1m PK: 170 dB re 1 µPa @ 30 m

Note: SELSS is per-pulse SEL (i.e., not an accumulated value).

6.5.3 Underwater Sound Modelling

To determine the spatial extent for impact and risk evaluation, a review of comparative underwater sound characterisation studies was undertaken to define relevant impulsive sound EMBAs:

- McPherson, C, and M Koessler. 2021. Empirical estimation of underwater noise and effect from survey equipment. Memo, Capalaba, Queensland, Australia: JASCO Applied Sciences for Cooper Energy.
- Welch, S.J., M.-N. R. Matthews, D.H. Stroot, A.M. Muellenmeister, and C.R. McPherson. 2023. Otway Exploration Drilling Program: Acoustic Modelling for Assessing Marine Fauna Sound

Exposures. Document 02760, Version 3.0 FINAL. Technical report by JASCO Applied Sciences for Xodus Group (ConocoPhillips Australia).

Modelling by Welch *et al.* (2023), produced for ConocoPhillips' Otway Exploration Drilling Program, used 3 sound propagation models (MONM-BELLHOP, FWRAM and VSTACK), for a SBP sound source located approximately 20 km south of the operational area.

Empirical estimation by McPherson and Koessler (2021) reviewed literature and used a simple spreading loss calculation where there were gaps in literature.

Comparing the predicted underwater sound level increases from both studies found results of modelling by Welch *et al*. (2023) to provide the most relevant estimates of impulsive sound propagation ranges. The modelling by Welch *et al.* (2023) was conducted at two locations at varying depths within VIC/P79 off the coast of Warrnambool within the Otway Basin (see Table 6-16). The modelling used a conservative AP3000 triple-plated boomer SBP system with a verified source level of 169dB re 1 μPa^2m^2s, which has been considered to provide conservative approximations of the potential sound fields and ranges of the SEL24h impact criteria for the range of SBP boomers (Wood and McPherson, 2019).

The lithology within the operational area includes some areas of bare limestone, and some areas with overlaying sand which is comparable to the lithology described within the study by Welch *et al.* (2023) including silty carbonate sand overlaying limestone. The range of water depths modelled by Welch *et al.* (2023) are also comparable to the water depth considered for this Activity: 56 m (see Table 3-1). Welch *et al.* (2023) is therefore considered to provide an appropriate basis for an EMBA by impulsive sound associated with the Activity. Where empirical estimations provide a more conservative estimate, predictions by McPherson and Koessler (2021) were used, where appropriate.

Table 6-16: Description of the Scenarios Modelled for Impulsive Sound Relevant to the Activity

Scenario	Description	Location		Water Depth
		Latitude	Longitude	
1	Boomer type Sub-Bottom Profiling (SBP) 24 h scenario survey lines.	38° 30' 06.3724" S	142° 07' 55.49" E	45 m
2		39° 02' 00.8251" S	142° 34' 07.53" E	110 m

Source: Welch et al. 2023

6.5.3.1 Noise Effect Criteria

Different species groups perceive and respond to sound differently, and so a variety of exposure criteria for the different types of impacts and species groups are considered. The following noise effect thresholds (Table 6-17), based on current best available science, have been used in the impact and risk assessment:

- Peak pressure levels (PK) and frequency-weighted accumulated sound exposure levels (SEL24h) from the US National Oceanic and Atmospheric Administration (NOAA) Technical Guidance (NMFS 2018, and NMFS 2024) and Southall *et al.* (2019) for the onset of Permanent Threshold Shift (PTS) and Temporary Threshold Shift (TTS) in marine mammals.
- Marine mammal behavioural threshold (Level B harassment[7]) based on the current NOAA (NOAA 2024) criterion for marine mammals of 160 dB re 1 µPa (SPL) for impulsive sound sources.

[7] NOAA (2005) defines Level B harassment as "acts that have the potential to disturb (but not injure) a marine mammal or marine mammal stock in the wind by disrupting behavioural patterns including, but not limited to, migration, breathing, nursing, breeding, feeding or sheltering."

Impulsive sound levels greater than 140 dB re 1 µPa (SPL) have a 50% probability of causing behavioural changes to migrating southern right whales and therefore is conservatively defined as the behavioural threshold for low-frequency cetaceans (Wood *et al.* 2012).

- Peak pressure levels (PK) and frequency-weighted accumulated sound exposure levels (SEL_{24h}) from Finneran et al. (Finneran *et al*. 2017) for the onset of PTS and TTS in marine turtles.
- Marine turtle behavioural response threshold of 166 dB re 1 µPa (SPL) (CoA, 2017) as applied by the US NMFS, along with a sound level associated with behavioural disturbance 175 dB re 1 µPa (SPL) (McCauley *et al.*, 2000).
- Sound exposure guidelines for fish, fish eggs and larvae, including quantitative criteria for mortality and potential mortal injury, recoverable injury and TTS and qualitative risk criteria for masking and behavioural effects (Popper *et al.,* 2014). Quantitative criteria are only available for mortality and potential mortal injury for fish eggs and fish larvae.

NOAA has recently published updated guidance for exposure thresholds for the onset of PTS and TTS for marine mammals within the Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0): Underwater and In-Air Criteria for Onset of Auditory Injury and Temporary Threshold Shifts (NMFS 2024). The updated thresholds now consider both the weighting function shape and the weighted threshold value. These new thresholds present a more conservative frequency-weighted accumulated sound exposure levels compared to those previously used, those suggested by Southall *et al.* (2019).

The sound modelling by McPherson and Koessler (2021) and Welch *et al*. (2023) occurred prior to the publication of the new thresholds guidance in 2024. Amplitude Energy have evaluated the difference that these new thresholds make for the continuous sound emission scenarios (Section 6.6; Appendix 7 - ; Connell *et al.* 2025), compared to previous thresholds, and incorporated the results into Section 6.6. The new modelling results demonstrate that the change to thresholds have some effect on the size of the TTS and AUD INJ (including PTS) sound contours, with some increasing the potential impact radii for some fauna types by ~25%. However, because of the original small potential effect radii for TTS and PTS (generally within a few hundred metres or tens of metres), the changes do not translate into a significant increase in potential for TTS or PTS onset. The radii for both TTS and PTS remain well within the potential behavioural disturbance radii. The low levels of impulsive noise anticipated from the Activity, coupled with the limited impact ranges, make it improbable that TTS or PTS will occur as a result of the activity. Furthermore, the control measures for underwater noise are based on continuous noise impact ranges (refer Section 6.6) and given that the continuous noise radii extend further than the impact ranges for impulsive noise, the controls are expected to remain effective.

Accomando *et al.* (2025) has also recently suggested updates to the underwater sound exposure thresholds for marine turtles. As per the approach detailed above, Amplitude Energy have similarly accounted for these new thresholds for the continuous sound emission scenarios Appendix 7 - ; Connell *et al.,* 2025) and incorporated the results into Section 6.6.

Table 6-17: Noise effect criteria for Impulsive Sound

Receptor	Behavioural	Impairment			Injury	
		Masking	Temporary threshold shift	Recoverable injury	Permanent threshold shift / AUD INJ	Mortality or potential mortal injury
Low-frequency cetaceans	SPL: 160 dB re 1 µPa	N/A	SEL_{24h}: 168 dB re 1 µPa^{2}s PK: 213 dB re 1 µPa	N/A	SEL_{24h}: 183 dB re 1 µPa^{2}s PK: 219 dB re 1 µPa	N/A
High-frequency cetaceans	SPL: 160 dB re 1 µPa	N/A	SEL_{24h}: 178 dB re 1 µPa^{2}s PK: 224 dB re 1 µPa	N/A	SEL_{24h}: 193 dB re 1 µPa^{2}s PK: 230 dB re 1 µPa	N/A
Very high frequency cetaceans	SPL: 160 dB re 1 µPa	N/A	SEL24h: 140 dB re 1 µPa2s* PK: 196 dB re 1 µPa*	N/A	SEL24h: 159 dB re 1 µPa^{2}s PK: 202 dB re 1 µPa	N/A
Otariid seals	SPL: 160 dB re 1 µPa	N/A	SEL_{24h}: 168 dB re 1 µPa^{2}s PK: 226 dB re 1 µPa	N/A	SEL_{24h}: 185 dB re 1 µPa^{2}s PK: 230 dB re 1 µPa	N/A
Turtles	SPL: 166 dB re 1 µPa SPL: 175 dB re 1 µPa	N/A	SEL_{24h}: 189 dB re 1 µPa^{2}s PK: 226 dB re 1 µPa	N/A	SEL_{24h}: 204 dB re 1 µPa^{2}s PK: 232 dB re 1 µPa	N/A
Fish (no swim bladder)	(N) High (I) Moderate (F) Low	(N) Low (I) Low (F) Low	SEL_{24h}: >>186 dB re 1 µPa^{2}s	SEL_{24h}: >216 dB re 1 µPa^{2}s	N/A	SEL_{24h}: >219 dB re 1 µPa^{2}s PK: >213 dB re 1 µPa

Receptor	Behavioural	Impairment			Injury	
		Masking	Temporary threshold shift	Recoverable injury	Permanent threshold shift / AUD INJ	Mortality or potential mortal injury
				PK: >213 dB re 1 µPa		
Fish (swim bladder not involved in hearing)	(N) High (I) Moderate (F) Low	(N) Low (I) Low (F) Low	SEL_{24h}: >>186 dB re 1 µPa^{2}s	SEL_{24h}: 203 dB re 1 µPa^{2}s PK: >207 dB re 1 µPa	N/A	SEL_{24h}: 210 dB re 1 µPa^{2}s PK: >207 dB re 1 µPa
Fish (swim bladder involved in hearing)	(N) High (I) High (F) Moderate	(N) Low (I) Low (F) Moderate	SEL_{24h}: 186 dB re 1 µPa^{2}s	SEL_{24h}: 203 dB re 1 µPa^{2}s PK: >207 dB re 1 µPa	N/A	SEL_{24h}: 207 dB re 1 µPa^{2}s PK: >207 dB re 1 µPa
Fish eggs and fish larvae (also relevant to plankton)	(N) Moderate (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) Moderate (I) Low (F) Low	N/A	SEL_{24h}: >210 dB re 1 µPa^{2}s PK: >207 dB re 1 µPa

**The NMFS 2024 does not include criteria for TTS to cetaceans for impulsive sounds (non-explosive), so criteria from Southall et al. 2019 has been used in line with Jasco 2024.*

6.5.4 Predicted Environmental Impacts and Risks

Potential impacts from impulsive noise emissions are:

- change in ambient sound

Potential risk:

- change in fauna behaviour, including:
  - marine mammals
  - marine turtles
  - fish including eggs and larvae
- auditory impairment (masking, TTS, recoverable injury), or auditory injuries (mortality or potential mortal injuries, PTS) to marine fauna, including:
  - marine mammals
  - marine turtles
  - fish including eggs and larvae

Potential impacts to marine invertebrates, such as cephalopods and crustaceans were not reached within the modelling results (Welch *et al.* 2023).

Indirect effects are possible to conservation values of protected areas and First Nations cultural values and sensitivities. Impacts and risks to First Nations cultural heritage are assessed in Section 8.3.

Socio-economic impacts on commercial fisheries have not been evaluated further, as there are no discernible impacts to behaviour and distribution expected at the population level given the limited nature and scale of activities and associated impulsive underwater sound emissions.

6.5.5 Impact and Risk Evaluation

6.5.5.1 Impact: Change in Ambient Sound

Inherent Consequence Evaluation

Ambient underwater sound is the level of sound which exists in the environment without the presence of the activity. Ambient underwater sound levels in the operational area are expected to range between 110 and 161 dB re 1 µPa. The ambient levels are inferred from passive acoustic monitoring, commissioned by Origin, conducted 5 km offshore from the coastline east of Warrnambool (Duncan *et al.* 2013).

Underwater sound modelling predicted increased levels of underwater sound up to 110 dB re 1 µPa would extend 3.37 km from an SBP sound source in the Otway Basin (Welch *et al.* 2023).

Given that impulsive sound sources of the Activity are related to activities that are intermittent, of a short-term duration and highly localised (change above an SPL of 110 dB re 1 µPa approximately 3.37 km from the SBP sound source), the consequence of this impact has been evaluated as **Level 1**, as underwater sound will return to existing ambient levels following completion of the activity with no remedial or recovery work required.

Risk: Change in Fauna Behaviour – Marine Mammals

Inherent Consequence Evaluation

Impulsive sound emissions may cause behavioural changes to marine mammals depending on the frequency and sound levels received, such that:

- Impulsive sound levels greater than 160 dB re 1 µPa (SPL) is the behavioural threshold for marine mammals including otariid seals, high-frequency cetaceans and very high-frequency cetaceans (NMFS, 2005).
- Impulsive sound levels greater than 140 dB re 1 µPa (SPL) have a 50% probability of causing behavioural changes to migrating southern right whales and therefore is conservatively defined as the behavioural threshold for low-frequency cetaceans (Wood *et al.* 2012).

Underwater sound modelling predicted the impulsive behavioural threshold for otariid seals, high-frequency cetaceans and very high-frequency cetaceans was not reached at any distance from a SBP sound source in the Otway Basin (Welch *et al*. 2023). This infers that impulsive underwater sound emissions from the Activity do not have the potential to cause behavioural changes to otariid seals, high-frequency cetaceans and very high-frequency cetaceans.

Underwater sound modelling predicted the impulsive behavioural threshold for low-frequency cetaceans was reached within 130 m of a SBP source in the Otway Basin (Welch *et al.* 2023). Therefore, impulsive underwater sound emissions generated by the Activity have the potential to cause behavioural changes to low-frequency cetaceans.

The sound source may be utilised throughout the operational area. Only a small part of the operational area may be exposed to noise at levels above behavioural disturbance thresholds, within 130 m of the sound source and this would last for between 5 to 7 days per survey campaign. Therefore, the impact will be temporary and localised. As noted above, underwater sound will return to existing ambient levels following completion of the Activity with no remedial or recovery work required.

A 130 m buffer around the operational area defines the behavioural EMBA for low-frequency cetaceans exposed to impulsive sounds. Table 6-18 provides details on the presence of low-frequency cetaceans, the potential behavioural changes that may occur and the resulting inherent consequence level for each low-frequency cetacean species. A comprehensive review of potential behavioural responses of marine mammals to impulsive noise, such as that resulting from SBP activity, is provided in Erbe *et al*. (2025), which was reviewed to identify potential species-specific behavioural changes. The judgement on potential presence within the behavioural EMBA (may occur vs likely to occur) is based on the overlap of BIAs and also available sightings data for the region, including but not limited to:

- Gill *et al*. (2015) - 123 aerial surveys between 2002 and 2013 from western Bass Strait to eastern Great Australian Bight.
- Origin (2018) – aerial surveys between June 2012 – March 2013 in the Otway Basin.
- Watson *et al.* (2021) – coastal southern right whale sightings between 1993 and 2018 in south-eastern Australia (east of the South Australia / Victorian Border).

Inherent Likelihood

The likelihood of behavioural changes to marine mammals depends on the impulsive sound source used, the potential presence of low-frequency cetaceans within the behavioural EMBA, and the relative sensitivity of different species and individuals to noise. SBP operating frequencies overlap vocalisation frequencies of low-frequency cetaceans (McPherson and Koessler, 2021). This overlap

could potentially mask vocalisations from low-frequency cetaceans causing behavioural changes. MBES and SSS operating frequencies do not overlap vocalisation frequencies of low-frequency cetaceans. As a result, there is no likelihood of behavioural change to low-frequency cetaceans during MBES and SSS operations.

For the risk event of behavioural changes to marine mammals to occur, the following combination of factors are required:

- Impulsive underwater sound emissions (i.e. from SBP operations)
- Low-frequency cetaceans present within 130 m of the impulsive sound source.

Considering the relatively small numbers, potential behaviours and movements of whales in the offshore area overlapping the activity, the likelihood of the impact occurring is considered to be small, with large, low frequency baleen whales unlikely to be present within the very small radius (130 m) of the impulsive sound source at the same time it is in use. Table 6-18 includes details on the frequency of recorded sightings of EPBC listed low-frequency cetaceans (where available) in the Otway Basin to infer presence within the behavioural EMBA. Based on available sightings data, the inherent likelihood level is judged as follows:

- minke whale – Remote (E)
- sei whale – Remote (E)
- pygmy blue whale – Unlikely (D)
- fin whale – Unlikely (D)
- pygmy right whale – Remote (E)
- southern right whale – Unlikely (D)
- humpback whale – Remote (E)

Table 6-18: Inherent Consequence Levels - Impulsive Sound - Behavioural Changes to Marine Mammals

Marine Mammals (EPBC Act Listing)	**Presence within Behavioural EMBA**	**Potential Behavioural Changes**	**Description of Potential Consequence**	**Inherent Consequence**
Low-frequency cetaceans				
Minke whale - EPBC Act: • Cetacean.	• May occur. • No BIAs overlapped. • Gill *et al.* (2015) - one sighting of an individual minke whale (2002-2013). • No confirmed sightings during Amplitude Energy Offshore Campaigns in the Otway.	Change in diving, avoidance or ceasing/reducing calls (Durbach *et al*. 2021; Kvadsheim *et al*. 2017).	• Localized and short-term potential impacts or disturbances to fauna. • Not expected to result in population level impacts.	Level 1
Sei whale - EPBC Act: • Vulnerable • Cetacean • Migratory	• Likely to occur. • No BIAs overlapped. • Gill *et al*. (2015) - 12 sightings of 14 individual sei and like sei whales (2002-2013).	Movement away from impulsive source and call cessation/ modification inferred from studies of other baleen cetaceans.	• Localized and short-term potential impacts or disturbances to species of recognized conservation value	Leve 2

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
	• No confirmed sightings during Amplitude Energy Offshore Campaigns in the Otway.		(nationally threatened). • Not expected to result in population level impacts.	
Pygmy blue whale - EPBC Act: • Endangered • Cetacean • Migratory	• Known to occur. • Foraging BIA overlapped. • During January to June, pygmy blue whales migrate through the operational area. • Origin (2018) – sightings of 120 individuals in the Otway Basin (2012-2013). • Approximately 221 observation records of pygmy blue whales were identified off the coast of Victoria between 2000 and 2024 (Atlas of Living Australia 2025). • One sighting of suspected blue whale in Q1 2025 during Amplitude Energy Offshore Campaign.	Cessation of deep feeding (deep feeding at water depths of 75 to 175 m), increased swimming speed and directed travel away from the sound source (from 160 to 210 dB re 1 µPa RMS) (Goldbogen *et al*. 2013). Responses are highly variable depending on initial behavioural state and environmental conditions (Erbe *et al.* 2025). When exposed to seismic sparker (30–450 Hz) at 131 dB re 1 µPa pk-pk and 114 dB re 1 µPa2s, blue whales demonstrate decreased call rates (di Iorio and Clark 2010).	• Localized and short-term potential impacts or disturbances to species of recognized conservation value (nationally threatened) within BIAs. • The risk of stopping blue whale individuals from deep feeding (Annie-2 well water depth is 56m) is not expected to result in population level impacts.	Level 2
Fin whale - EPBC Act: • Vulnerable • Cetacean • Migratory	• Likely to occur. • No BIAs overlapped. • Gill *et al.* (2015) - 7 sightings of 8 individual fin and like fin whales (2002-2013). • No confirmed sightings during Amplitude Energy Offshore Campaigns in the Otway	Modify song characteristics under increased background noise conditions, and temporary displacement (Castellote *et al*. 2012). When exposed to mid-frequency sonar, only 5 of 15 fine whales demonstrated behavioural responses (Southall *et al.* 2023).	• Localized and short-term potential impacts or disturbances to species of recognized conservation value (nationally threatened). • Not expected to result in population level impacts.	Level 2
Pygmy right whale EPBC Act: • Cetacean • Migratory	• May occur. • No BIAs overlapped. • Gill *et al.* (2015) - 1 sighting of 100 individual pygmy right whales (2002-2013).	Movement away from impulsive source and call cessation/ modification inferred from studies of other baleen cetaceans.	• Localized and short-term potential impacts or disturbances to fauna. • Not expected to result in population level impacts.	Level 1

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
Southern right whale - EPBC Act: • Endangered • Cetacean • Migratory	• Known to occur. • Migration and reproduction BIA overlapped. • During May-June and September-October southern right whales pass through the Operational Area to move to and from coastal aggregation areas. • Watson *et al.* (2021) - 375 individual southern right whales (including 48 breeding females) were identified in south-eastern Australia (east of the SA/Victorian border) (1993-2018). • Some historical sightings during Amplitude Energy offshore campaigns in the Otway (refer to description of the Environment)	Behavioural changes inferred from related species (North Atlantic right whale), that immediately stopped foraging (abandoned foraging dive prematurely) and quickly approached the surface when exposed to amplitude modulated signals with a maximum source level of 173 dB re 1 µPa at 1 m (Nowacek *et al.* 2004; Matthews and Parks 2021). Changes to vocalisations including call cessation/ modification is inferred from studies of other baleen cetaceans.	• Localized and short-term potential impacts or disturbances to species of recognized conservation value (nationally threatened) within BIA. • The risk of behavioural change to migrating southern right whale individuals within highly localized area is not expected to result in population level impacts. • Logans beach is ~24km from the operational area; no overlap with behavioural disturbance contours from is predicted.	Level 2
Humpback whale - EPBC Act: • Cetacean • Migratory	• Likely to occur. • No BIAs overlapped. • Gill *et al*. (2015) - 10 sightings of 18 individual humpback whales (2002 – 2013). • Multiple sightings of humpback whales in Q2 2025 during Amplitude Energy Offshore Campaign.	When exposed to an active seismic array, behavioural changes, including to movement patterns, dive/respiratory parameters and rates of breaching were small, variable and temporary (Dunlop *et al*. 2017). Behavioural changes to humpback whales from exposure to lower impulsive sound source levels from geophysical surveys may also result in small, variable, temporary behavioural changes. Humpback whales were more likely to demonstrate a behavioural response to seismic arrays at >130 dB	• Localized and short-term potential impacts or disturbances to fauna. • Not expected to result in population level impacts.	Level 1

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
		1 µPa^{2}s, however, some whales did not change behaviour at the highest source levels of 160–170 dB re 1 µPa^{2}s (Dunlop *et al.* 2018).		

Inherent Risk Severity

The highest inherent risk severity of behavioural changes to marine mammals from impulsive sound emissions is considered **Low** (Table 6-19).

Table 6-19: Inherent Risk Severity – Impulsive Sound – Behavioural Changes to Marine Mammals

Marine Mammals	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Severity
Low-frequency cetaceans			
Minke whale	1	E	Low
Sei whale	2	E	Low
Pygmy blue whale	2	D	Low
Fin whale	2	D	Low
Pygmy right whale	1	E	Low
Southern right whale	2	D	Low
Humpback whale	1	E	Low

6.5.5.2 Risk: Auditory Impairment or Injury - Marine Mammals

Inherent Consequence Evaluation

Auditory injury is defined by DCCEEW (formally DAWE) as both permanent and temporary hearing impairment and any other form of physical harm arising from anthropogenic sources of underwater noise (DAWE 2021). Permanent and temporary hearing impairment for the purposes of this evaluation is the onset of PTS and TTS, respectively. PTS and TTS thresholds defined by Southall *et al.* (2019) have been used to determine the range in which the onset of auditory injury will occur to marine mammals from exposure to impulsive sound (Table 6-20).

Table 6-20: Impulsive underwater sound PTS and TTS onset thresholds for 24-hour sound exposure level (SEL24h) and peak (PK) (Southall et al. 2019)

Hearing Group	PTS onset thresholds		TTS onset thresholds	
	Weighted SEL24h (db re 1 µPa^2.s)	PK (db re 1 µPa)	Weighted SEL24h (db re 1 µPa^2.s)	PK (db re 1 µPa)
Low-frequency cetaceans	183	219	168	213
High-frequency cetaceans	185	230	170	224
Very high-frequency cetaceans	155	202	140	196

Hearing Group	PTS onset thresholds		TTS onset thresholds	
	Weighted SEL24h (db re 1 µPa^2.s)	PK (db re 1 µPa)	Weighted SEL24h (db re 1 µPa^2.s)	PK (db re 1 µPa)
Otariid seals	183	232	168	226

Underwater sound modelling of a SBP activity in the Otway Basin was based on a AP3000 triple-plate boomer system towed at a depth of 2 m, where the specifications for the operating frequency (broadband) and per-pulse SEL source level were 200 Hz to 16 kHz and 169 dB 1µPa^{2}m^{2}s, respectively (Welch *et al*. 2023). This SBP boomer system is considered representative of the geophysical survey operations as defined in Table 6-15. MBES and SSS are considered point-like sources, whereas SBP boomer is not a point-like source and expected to emit sound waves over a larger area (Welch *et al*. 2023).

Results of this study predicted the onset of TTS for very high-frequency cetaceans, based on SEL24h thresholds, if very high frequency cetaceans remain within 20 m of an SBP sound source for 24 hours (Welch *et al*. 2023). SEL24h thresholds for other hearing groups were not reached. PK thresholds for all hearing groups were also not reached. SEL24h is a cumulative metric representing the total noise exposure over 24 hours. It assumes continuous exposure at a fixed point, providing a worst-case scenario. Realistically, very high-frequency cetaceans are mobile and would not remain in an injury inducing ensonified area for 24 hours (i.e. within 20 m of an SBP sound source over a prolonged period). As a result, modelled distances of potential injury using accumulated SEL thresholds does not guarantee injury to marine mammals will occur.

Review of the EPBC listed marine mammal species (or species habitat) that may occur within the operational area (Table 4-3) indicates no presence of any very high-frequency cetaceans such as true porpoises, river dolphins, pygmy/dwarf sperm whales or some oceanic dolphins (Southall *et al.* 2019). Oceanic dolphins traveling through the area might experience brief exposure, however this exposure is not expected to not cause injury, noting the mobile nature of this species. As such, auditory injury to marine mammals from the Activity impulsive sound emissions are not credible and not evaluated further.

Inherent Likelihood

Not applicable.

Inherent Risk Severity
Not applicable.

6.5.5.3 Risk: Change in Fauna Behaviour - Marine Turtles

Inherent Consequence Evaluation

Impulsive sound emissions may cause behavioural changes to turtles depending on the frequency and sound levels received, such that:

- Impulsive sound levels greater than 166 dB re 1 µPa (SPL) is the behavioural threshold for turtles (McCauley *et al*. 2000).

Results of underwater modelling of a SBP activity in the Otway Basin did not predict the potential onset of behavioural change to turtles (Welch *et al*. 2023).

However, empirical estimates predicted the impulsive behavioural threshold for turtles is reached within 130 m of the sound source (McPherson and Koessler, 2021). This is consistent with the relative risk criteria from Popper *et al.* (2014) that suggest that behavioural changes (e.g., avoidance,

diving) would only be expected for individuals near the source (high risk of behavioural impacts within tens of metres of source and moderate risk of behavioural impacts within hundreds of metres of the source) (McPherson and Koessler 2021). Therefore, the potential for impulsive underwater sound emissions to cause behavioural changes to turtles cannot be ruled out.

A 130 m radius around the location of each impulsive sound source, representing the behavioural EMBA for turtles exposed to impulsive sounds, will be located entirely within the operational area. Table 6-21 provides details on the presence of EPBC listed turtles within the behavioural EMBA, potential behavioural changes that may occur and the resulting inherent consequence level for each turtle species.

Table 6-21: Inherent Consequence Levels - Impulsive Sound - Behavioural Changes to Marine Turtles

Marine Turtles (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
Loggerhead turtle - EPBC Act: • Endangered • Marine • Migratory	• Likely to occur. • No BIAs overlapped.	Interrupted basking behaviour and diving in response to sound generated during airgun operations (DeRuiter and Doukara 2012).	• Localized and short-term potential impacts or disturbances to species of recognized conservation value (nationally threatened). • As there are no BIA's for the species within the temperate south east region, only small numbers (if any) expected. No population level impacts expected.	Level 1
Green turtle - EPBC Act: • Vulnerable • Marine • Migratory	• May occur. • No BIAs overlapped.	Increased swimming speed and erratic behaviour when exposed to sound generated by pile driving, airguns, and sonar (Papale *et al*. 2020).		Level 1
Leatherback turtle - EPBC Act: • Endangered • Marine • Migratory	• Likely to occur. • No BIAs overlapped.	Increased swimming speeds, diving and erratic behaviour inferred from studies of other turtle species.		Level 1

Inherent Likelihood

The likelihood of behavioural changes to turtles depends on the impulsive sound source used and the potential presence of turtles within the behavioural EMBA, as well as the relative sensitivity of different species and individuals to noise. Only SBP operating frequencies overlap hearing frequencies of turtles (McPherson and Koessler 2021). This overlap could potentially mask turtle hearing causing behavioural changes. MBES and SSS operating frequencies are outside of hearing frequencies of turtles (McPherson and Koessler 2021). As a result, there is no likelihood of behavioural change to turtles during MBES and SSS operations.

For the risk event of behavioural changes to turtles to occur, the following combination of factors are required:

- SBP operations

- turtles present within 130 m of the SBP sound source.

The Atlas of Living Australia (Atlas of Living Australia 2025) and the Victoria Biodiversity Atlas (VBA) was reviewed to understand the potential likelihood of marine turtle presence within the operational area (ALA 2025; Victorian DELWP 2025). No observations or occurrences of loggerhead turtles, green turtles or leatherback turtles were recorded within the behavioural EMBA. Therefore, the likelihood for all species is judged to be **Remove (E)**.

Inherent Risk Severity

The highest inherent risk severity of behavioural changes to marine turtles from impulsive sound emissions is considered **Low** (Table 6-22).

Table 6-22: Inherent Risk Severity - Impulsive Sound - Behavioural Change to Marine turtles

Species	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Severity
Loggerhead turtle	1	E	Low
Green turtle	1	E	Low
Leatherback turtle	1	E	Low

6.5.5.4 Risk: Auditory Impairment or Injury - Marine Turtles

Inherent Consequence Evaluation

Results of underwater modelling of a SBP activity in the Otway Basin did not predict the potential onset of auditory injury to marine turtles (Welch *et al*. 2023). This risk is not evaluated further.

Inherent Likelihood

Not applicable.

Inherent Risk Severity

Not applicable.

6.5.5.5 Risk: Change in Fauna Behavioural – Fish

Inherent Consequence Evaluation

Sound pressure changes may be detected by fish with a swim bladder, as the gas within the swim bladder changes as a result of changing sound pressure. If the swim bladder is near the ear or connected to the hearing system, the hearing sensitivity is even greater (Popper *et al*. 2014). Fish without a swim bladder cannot detect sound pressure. However, most fish species are expected to be able to detect particle motion. The most relevant criteria for considering potential impacts on fish and shellfish are considered to be those provided in the Sound Exposure Guidelines for Fishes and Sea Turtles (Popper *et al*. 2014). Fish species are grouped into hearing sensitivity categories defined by a number of factors such as their hearing anatomy, particle motion detection, the use of sound during navigation or mating and the presence or absence of a swim bladder:

- Fish with no swim bladder that are sensitive to particle motion and therefore only to a narrow band of frequencies (e.g. cartilaginous fish).
- Fishes with swim bladders that do not appear to play a role in hearing (e.g. Scombridae). Therefore, they are only sensitive to particle motion and only show sensitivity to a narrow band of frequencies.

- Fishes with swim bladders involved in hearing. These species are sensitive to both particle motion and sound pressure. The swim bladder may be close to but not intimately connect to the ear (e.g. eels) or mechanically linked to the ear (e.g. Clupeidae), with the latter representing fish of the greatest hearing sensitivity.
- Eggs and larvae.

The risk of behavioural changes to most fish, including eggs and larvae, from impulsive sound emissions is generally high within tens of metres of the source based on the qualitative guidelines by Popper *et al.* (2014), reducing to moderate within hundreds of metres from the source. The risk of behavioural change remains high for fish with swim bladder involved within hundreds of metres of the source (Popper *et al.* 2014). However, these guidelines are derived for seismic arrays, likely of a greater source level than SBP, and therefore, it is considered that any behavioural responses will likely be limited to within tens of metres from the source, and therefore the use of the 130 m behavioural EMBA is considered appropriate. The underwater sound will only be elevated in the vicinity of the SBP for 5 to 7 days per survey campaign across the 5-year EP period. The impact will be temporary and localised and recovery from any behavioural change caused by the temporary elevation of underwater sound is expected once the survey activities are complete.

Table 6-23Table 6-23 provides details on the presence of fish species that are EPBC Act listed, or which have been identified as culturally significant through consultation, within the behavioural EMBA, potential behavioural changes that may occur and the resulting inherent consequence level for each fish species. A comprehensive overview of the potential impact of seismic on fish is described in Carroll *et al.* (2017) and has been reviewed to identify potential behavioural changes, noting SBP typically involves lower source levels compared with seismic surveys. It should also be noted that behavioural responses to elevated underwater sound varies greatly between species, and data is lacking for some species groups (e.g. elasmobranchs). Furthermore, most data is derived from caged studies which are not representative of open conditions (Carroll *et al.* 2017).

Inherent Likelihood

For the risk event of behavioural changes to fish to occur, the following combination of factors are required:

- Impulsive underwater sound emissions (i.e. SBP operations)
- Fish species present within 130 m of the impulsive sound source

Table 6-23 provides details on the presence of EPBC listed fish in the Otway Basin to infer presence within the behavioural EMBA. Based on available data, the inherent likelihood level is judged as follows:

- white shark – Possible (C)
- eastern school shark – Remote (E)
- grey nurse shark – Remote (E)
- porbeagle / mackerel shark – Unlikely (D)
- Australian grayling – Remote (E)
- blue warehou – Possible (C)
- pipefish, pipehorse, seadragon and seahorse species – Unlikely (D)
- short-finned eels - Possible (C).

Table 6-23: Inherent Consequence Levels - Impulsive Sound - Behavioural Changes to Fish

Fish (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
White shark - EPBC Act: • Vulnerable • Migratory	• Known to occur. • No BIAs overlapped. • Seasonal presence in southern Australia during early summer.	No significant difference in behaviour when exposed to artificial irregularly pulsed sound (Chapius *et al.,* 2019).	• Unlikely to result in significant behavioural change to species of recognised conservation value (nationally threatened).	Level 1
Eastern school shark - EPBC Act: • Critically endangered	• May occur. • No BIAs overlapped.	Inferred behavioural changes based on coastal sharks displaying less inquisitive behaviours when exposed to irregularly pulsed sound (Chapius *et al*., 2019).	• Highly localised and short-term potential impacts to species of recognised conservation value (nationally threatened), recovery expected.	Level 1
Grey nurse shark - EPBC Act: • Migratory • **Critically Endangered**	• May occur. • No BIAs overlapped.		• Highly localised and short-term potential impacts to species of recognised conservation value (nationally threatened), recovery expected.	Level 1
Porbeagle / mackerel shark - EPBC Act: • Migratory	• Likely to occur. • No BIAs overlapped.		• Highly localised and short-term potential impacts to species of recognised conservation value (nationally threatened), recovery expected.	Level 1
Australian grayling - EPBC Act: • Vulnerable	• May occur. • No BIAs overlapped.	Inferred behavioural changes based on coastal pelagic fish schools dispersing or changing depth when exposed to sonar/echosounder (Hawkins *et al*. 2014). Slotte *et al.* (2004) observed no significant change in horizontal distribution to pelagic fish, however, a vertical movement of mesopelagic fish to deeper waters was observed.	• Highly localised and short-term potential impacts to species of recognised conservation value (nationally threatened), recovery expected.	Level 1
Blue warehou - EPBC Act: • Critically endangered	• Known to occur. • No BIAs overlapped.		• Highly localised and short-term potential impacts to species of recognised conservation value (nationally threatened), recovery expected.	Level 1
Pipefish, pipehorse, seadragon and seahorse species -	• May occur. • No BIAs overlapped.		• Highly localised and short-term potential impacts, recovery expected.	Level 1

Fish (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
EPBC Act: • Marine				
Short-finned eels - Not listed under the EPBC Act. Culturally significant to First Nations people (Koster *et al*. 2021)	Seasonal presence in the Otway Basin and Bass Strait during spawning migration i.e. downstream migration of adult eels during late summer and autumn. Upstream migration of larvae and glass eels, where glass eels enter estuaries during mid-winter to late spring (VFA 2017).	Behavioural avoidance (increased swimming, speed and movements away from the source) observed in some European eel and river lamprey (Deleau *et al.* 2019).	• Highly localised and short-term potential impacts to a culturally important species, recovery expected.	Level 1

Inherent Risk Severity

The highest inherent risk severity of behavioural changes to fish including eggs and larvae from impulsive sound emissions is **Low** (Table 6-24).

Table 6-24: Inherent Risk Severity - Impulsive Sound - Behavioural Changes to Fish

Fish	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Severity
White shark	1	C	Low
School shark	1	E	Low
Shortfin mako	1	D	Low
Grey nurse sark	1	E	Low
Mackerel shark	1	D	Low
Australian grayling	1	E	Low
Blue warehou	1	C	Low
Pipefish, pipehorse, seadragon and seahorse species	1	E	Low
Short-finned eels	1	C	Low

6.5.5.6 Risk: Auditory Impairment or Injury to Fish

Inherent Consequence Evaluation

Results of underwater modelling of a SBP activity in the Otway Basin did not predict the potential onset of auditory impairment or injury to fish including eggs and larvae (Welch *et al.* 2023). This risk is not evaluated further.

Inherent Likelihood

Not applicable.

Inherent Risk Severity

Not applicable.

6.5.6 Control Measures, ALARP, and Acceptability Assessment

Table 6-25 provides a summary of the control measures and ALARP and acceptability assessment relevant to impulsive sound emissions. A detailed assessment has been undertaken and, as part of Amplitude Energy's relevant persons engagement for previous projects and impacts, Amplitude Energy has sought advice from Australian Antarctic Division (AAD) on measures implemented or considered by the AAD for voyages into sensitive areas.

Table 6-25: Underwater Sound Emissions – Impulsive ALARP, Control Measures and Acceptability Assessment

Underwater Sound Emissions - Impulsive	
ALARP Decision Context and Justification	**ALARP Decision Context: Type A** Impacts from impulsive sound emissions are well understood; there will always be some uncertainty around the reaction of individual animals, and hence the assessment of impacts and risks has been conservative, from the selection of disturbance criteria, modelling assumptions, and evaluation of potential consequence and likelihood.

Underwater Sound Emissions - Impulsive	
	Activities are well practised, and there are no conflicts with company values, no partner interests, and no significant media interests. Because the potential impacts to marine fauna of conservation value are evaluated as **Level 2**, Amplitude Energy believes **ALARP Decision Context A** should apply to marine fauna with the exception of pygmy blue whales and southern right whales. **ALARP Decision Context: Type B** **ALARP decision context B** has been applied in relation to pygmy blue whales and southern right whales because there is a residual (low) risk in relation to behavioural disturbance to these species within a BIA. The conservation management and national recovery plans for these species considers indicate that at certain times of year and for certain activities, additional mitigation actions and an adaptive management plan may be required in keeping with a precautionary approach. Further controls to manage residual risks have been considered and several additional controls have been adopted. The adopted controls ensure the project environmental outcomes can be met and are not inconsistent with the objectives and relevant actions of species recovery plans.
Control Measure	**Source and Description of Control**
CM08: Planned Maintenance System	Power generation and propulsion systems on vessels and the MODU will be operated in accordance with manufacturer's instructions and ongoing maintenance to ensure efficient operation. *Risk event addressed: Change in fauna behaviour, auditory impairment or auditory injury from impulsive sound.*
CM13: Offshore Operational Procedures	At a minimum, vessel operators shall adhere to the distances and vessel management practices of EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans describes strategies to ensure whales and dolphins are not harmed during offshore interactions with vessels and helicopters. Vessels adhere to the distances and vessel management practices of EPBC Regulations (Part 8) with increased caution zone of 500 m between whales and project vessels. *Risk event addressed: Change in fauna behaviour*
Additional Controls Adopted	**Source and Description of Control**
CM15: Campaign Risk Review	Risk reviews are standard practice for offshore campaigns. The Amplitude Energy Environmental Protocol describes how environmental impact and risk management, including risk assessments, is undertaken for activities including offshore campaigns. As part of campaign planning a risk review will be undertaken to re-assess campaign environmental impacts and risks to ensure ALARP and acceptability criteria are met. The assessment of environmental impacts and risks will focus on aspect: subsea noise, and risks to endangered whale species, specifically pygmy blue whales, and southern right whales. The review framework is described in Section 12.10 and considers: • Model activity scenarios where additional details may have become available. • Integrate into modelling the latest relevant sound exposure thresholds. • Assess any new or updated information to determine if the rationale for previously discounted controls remains reasonable, or if additional measures are required to ensure that risks are continually reduced to levels that are ALARP and are of an acceptable level. • Potential for cumulative impacts due to concurrent and sequential vessel activities with other projects and titleholders.

Underwater Sound Emissions - Impulsive	
	The review may be undertaken at different stages of the campaign planning, prior to a campaign activity commencing to assess any new or updated information to avoid or reduce overlap with endangered whales, where practicable, and to determine if additional controls are required to ensure that risks are continually reduced to levels that are ALARP and are of an acceptable level. *Risk event addressed: Change in fauna behaviour, auditory impairment or auditory injury from impulsive sound.*
CM17: Offshore Victoria Whale Disturbance Risk Management Procedure	The impact and risk assessment has shown the potential for interaction between whales and the Activity, with some uncertainty around the likelihood of impacts. This uncertainty is addressed through the implementation of actions and adaptive management measures which fall within the Offshore Victoria Whale Disturbance Risk Management Procedure (Section 12.10). The Offshore Victoria Whale Disturbance Risk Management Procedure provides details on level of whale observation effort, triggers for actions and the actions to be taken to avoid injuring whales and avoid behavioural disturbance to endangered whale species (blue whales and southern right whales), reduce the risk of displacement of a foraging blue whale, and minimise the risk of disturbance to a southern right whale in a migration and/or reproduction area (EPO16). The Offshore Victoria Whale Disturbance Risk Management Procedure details requirements of the Activity which are addressed and summarised in Section 6.6.5 and Section 12.10. The requirements have been developed to account for the largest noise contours that may be produced throughout the duration of the activity. As such, the requirements are based on the distances predicted from the modelling of continuous noise emissions (see Section 6.6) and are therefore considered conservative and appropriate for activities which produce impulsive noise emissions. *Risk event addressed: Change in fauna behaviour, auditory impairment or auditory injury from impulsive sound.*
CM11: Titleholder Collaboration	Amplitude Energy will share sightings data including behavioural observations with other Titleholders in the Otway region and local research organisations to help inform each other's programs of work and respective risk reviews. This data can be used by appropriate parties for population and behavioural research and to inform management of impacts and risks from their own project activities.
Impact and Risk Summary	
Residual Impact Consequence	Change in ambient sound from impulsive sound: **Level 1** – Minor local impacts or disturbances to ambient sound, nil to negligible remedial / recovery works required.
Residual Risk Consequence	**Level 2** – Localised short-term impacts to species or habitats of recognised conservation value not affecting local ecosystem function; remedial, recovery work to land, or water systems over days / weeks.
Likelihood	Due to the nature and scale of the proposed activities, and considering the proposed controls, the likelihood of behavioural changes due to underwater sound emissions is assessed as: • **Possible (C)** - Conceivable and could occur at some time. Could occur during the activity although a rare combination of factors would be required for the occurrence.
Residual Risk	Behavioural change, auditory impairment or auditory injury from impulsive sound: Low.
Demonstration of Acceptability	
Principles of ESD	Underwater impulsive sound emissions are evaluated as having up to **Level 2** consequence which is not considered as having the potential to result in serious or

Underwater Sound Emissions - Impulsive	
	irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required.
Legislative and Conventions	Impulsive sound emissions will be managed in accordance with legislative requirements. Sound emissions will: • Not impact on the recovery of marine turtles as per the Recovery Plan for Marine Turtles in Australia (CoA 2017). • Be managed such that any pygmy blue whale continues to utilise the area without injury and is not displaced from a foraging area in accordance with DAWE (2021) guidance on key terms, where the action is needed to achieve the objective of the blue whale CMP (DoE 2015a). • Not impact the recovery of the blue whale as per the CMP for the Blue Whale (DoE 2015a). • Not prevent southern right whales utilising a migration BIA or HCTS, or cause auditory impairment (DCCEEW 2024b). • Be managed such that the risk of behavioural disturbance to southern right whales within BIA's and Habitats Critical to Survival (HCTS) is minimised (DCCEEW 2024b) • Not impact the recovery of the southern right whale as per the National Recovery Plan for the Southern Right Whale (DCCEEW 2024b). • Not impact the recovery of the white shark as per the Recovery Plan for the White Shark (DSEWPaC 2013a). Actions from the CMP for the Blue Whale (DoE 2015a) applicable to the activity in relation to assessing and addressing anthropogenic sound have been addressed as per: • Assessing the effect of anthropogenic sound on pygmy blue whale behaviour. Section 6.5.5 assesses the effects of anthropogenic noise from the activity on blue whale behaviour. • Be managed such that any pygmy blue whale continues to utilise the area without injury and is not displaced from a foraging area. Mitigation measures will be implemented to reduce the risk of displacement occurring during operations where modelling indicates that behavioural disturbance within a foraging area may occur (DAWE, 2021). Actions from the Southern Right Whale Recovery Plan (DCCEEW 2024b) applicable to the Activity in relation to addressing anthropogenic noise have been provided for. The specific actions, and how they are addressed are summarised within the acceptability assessment in Section 6.6.5.
Internal Content	Relevant management system processes adopted to implement and manage hazards to ALARP include: • Risk Management (MS03) • Health Safety and Environment Management (MS09) • Supply Chain and Procurement Management (MS11) Activities will be undertaken in accordance with the Implementation Strategy (Section 11.0).
External Context	Activity will be undertaken in a manner consistent with relevant legislation, industry standards and guidelines, offshore practices and benchmarking. The activity is not predicted to result in impacts to species that would be inconsistent with recovery plans or conservation advice.
Other requirements	No objections or claims have been received during consultation regarding underwater sound emissions.

Underwater Sound Emissions - Impulsive	
	Amplitude Energy has previously sought advice from the AAD in relation to the management of impacts from noise. The consultation outcomes are presented within the BMG Closure Project Phase I EP (NOPSEMA ID: 6825) and are not repeated here. Suggestions provided by the AAD have been re-evaluated within the ALARP assessment process below in the context of the Activity.
Demonstration of meeting the defined acceptable levels in the OPP	Section 8.1.6 of the **East Coast Supply Project OPP** demonstrates the acceptability of impacts and risks associated with underwater sound emissions – impulsive. This acceptability demonstration is also valid and appropriate for the Activity (given this Activity is described and assessed in the OPP) and is supported by further evaluation against the acceptability factors as detailed above. Impacts and risks associated with the Activity are expected to be below the defined acceptable levels as described in the OPP by meeting the additional acceptability criteria described in Section 5.2.4.3, such as that for underwater sound emissions – impulsive: • OPP EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • OPP control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence, likelihood and residual risk are the same as those defined in the OPP. • No changes to internal or external context as defined in the OPP including no additional objections and claims were raised against this aspect.
Acceptability Outcome	**Acceptable** Amplitude Energy has determined that impacts and risks related to continuous sound emissions are acceptable, based on: • The planned management of impacts and risks integrates Amplitude Energy internal requirements, including relevant management system processes. • The activities will be managed in a way that is not inconsistent with the relevant principles of ESD. The proposed controls and impact and risk levels are not inconsistent with national and international standards, laws, and policies including applicable plans for management and conservation advices, and significant impact guidelines for MNES. No relevant feedback from has been received from stakeholders to inform the values and sensitivities /existing environment, impacts and risks, performance outcomes or mitigation measures for this Activity. To manage impacts to receptors to or below the defined acceptable levels the following EPOs (equivalent to OPP EPOs as detailed in Appendix 1 -) have been applied: EPO14: Impacts to marine fauna from underwater anthropogenic noise emissions will be limited to temporary* behavioural change localised** to the noise source. *Not exceeding the duration of the activity component (i.e. vessel campaign) (described in Section 3.2) **Not exceeding the noise EMBA defined for the activity (described in Sections 6.5 and 6.6) EPO15: No death or injury[8] to EPBC Act listed threatened, migratory or cetacean species. EPO16: Project related underwater noise within biologically important areas and habitat critical to the survival of relevant species will be managed through the implementation of Cooper Energy Offshore Victoria Whale Disturbance Risk Management Process, such that: • Any blue whale continues to utilise biologically important areas without injury and is not displaced from a foraging area.

Underwater Sound Emissions - Impulsive	
	• Southern right whales are not prevented from utilising biologically important areas[9] or habitat critical to the survival of a species or cause auditory impairment. • The risk of behavioural disturbance to southern right whales will be limited to temporary behavioural disturbance of individuals. EPO17: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable.

6.6 Underwater Sound Emissions - Continuous

6.6.1 Cause of Aspect

The source of continuous underwater sound emissions that will occur as a result of the Activity are identified in Table 6-26 and described in further detail in subsections below. The introduction of continuous underwater sound emissions may temporarily elevate ambient underwater sound levels in the marine environment.

Table 6-26: Activities that will Generate Continuous Underwater Sound Emissions

Aspect / Phase	Activity component
Well construction	Drilling operations
Support activities	MODU operations
	Vessel operations
	Helicopter operations
	ROV / AUV operations
Contingent activities	Well abandonment activities

6.6.2 Aspect Characterisation

Vessel and MODU activities are the main contributors of sound emissions. These have been described and modelled within Connell et al. (2023) and used within the impact evaluation. There are other activities that contribute sound at a far lower level that are briefly described below; these sources have not been modelled for this Activity as they are low level and generally accepted as indistinguishable from the vessels and MODU activities.

6.6.2.1 Well Construction

Well construction activities will generate sound emissions during the Activity, including:

- Drilling: the MODU will generate a small amount of continuous sound emissions during drilling transmitted directly via the drill bit. This will be indistinguishable from the MODU activities, therefore expected to have no additive effect on the activity behavioural EMBAs.
- Flaring: only a very small fraction of the acoustic energy produced from flaring transmit through the air/water boundary due to the surface of water acting as a reflective plane and a significant component of acoustic energy reflecting into the air. While underwater received sound pressure level during flaring is estimated to be 136 dB re 1µPa at 1 m (SPL) below the sea surface, it is

expected to attenuate to ambient levels within a very short distance (within metres) (Woodside 2024) and therefore expected to have no additive effect on the activity behavioural EMBAs.

6.6.2.2 Support Activities

Support activities will generate sound emissions during the Activity, including:

- The MODU will generate sound from onboard equipment vibrations (e.g., pumps, generators, and machinery), and a smaller portion transmitted directly via the drill bit during drilling. The MODU may operate in a thruster assist mode to move into the well location and to prevent emergency situations as per the Rig Safety Case. This system generates variable continuous sound during infrequent operation of one to six thrusters in response to feedback from the mooring system. The scenarios that generate continuous sound during MODU activities has been evaluated within Section 6.6.2.4.
- Vessels generate continuous sound from propellor cavitation, thrusters, hydrodynamic flow around the hull, and operation of machinery and equipment. Sound from support vessels operating during drilling activities and survey vessels has been assessed to determine the cumulative impact of multiple continuous sound sources in close proximity. The scenarios that generate continuous sound during vessel activities is evaluated within Section 6.6.2.4.
- Helicopter activities will introduce continuous sound emissions due to the noise from the blade rotation. Richardson et al. (1995) reported helicopter sound (for Bell 214 type) being audible in air for four minutes before it passed over receivers, but only detectable underwater for 38 seconds at 3 m depth and for 11 seconds at 18 m depth for the same flight path. This would be a brief daily occurrence. Noise levels for typical helicopters used for offshore transfers (Eurocopter Super Puma AS332) at 150 m separation distance has been measured at a maximum of 90.6 dB (Woodside 2014). Similar to flaring, the majority of the sound is not expected to transfer from air to water, and the portion that does, would attenuate to ambient levels within a very short distance (within metres) and therefore expected to have no additive effect on the activity behavioural EMBAs.

6.6.2.3 Contingent activities

In the event that P&A is required, subsea cutting of wellheads will introduce localised and temporary continuous sound into the marine environment of the operational area. Previous studies have found that the continuous noise generated during well cutting, using a diamond wire cutting of a 32-inch conductor in approximately 80 m of water, was largely indistinguishable from background vessel sound at lower frequencies (Pangerc et al. (2016); modelling by Connell et al. (2021) for the BMG decommissioning project (offshore Victoria) also found that an ROV and cutting activity had no influence on behavioural EMBAs for the activity, which were driven by sound from vessel DP.

6.6.2.4 Underwater Sound Modelling

Amplitude Energy commissioned JASCO to undertake a modelling study of underwater sound levels associated with drilling and support vessel-based activities at Annie-2 to define relevant continuous sound EMBAs for impact and risk evaluation (Appendix 7 - , Connell and Koessler 2025).

Results of the study define the spatial extent of potential acoustic impact to ambient sound and the spatial extent of potential impact thresholds to marine mammals, turtles and fish including eggs and larvae. The predicted spatial extent for the onset of relevant impact thresholds is detailed in the following subsections.

The vessel(s) used during the Activity will be selected as a part of a tender process as planning progresses, and therefore, the specifications are not known. The selected vessels and associated sound source levels are expected to be analogous to those considered by Connell and Koessler (2025). Notably, the modelling of AHTS is considered representative (albeit conservative) for the survey vessels that will be utilised during the geophysical survey activities.

The MODU under DP (Scenario 9 and 10 within Table 6-27) will be used infrequently during the campaign, for initial manoeuvring over a well centre during the mooring process; and if necessary, during severe weather events to provide additional positioning redundancy to prevent, or respond to, a mooring failure.

Table 6-27 contains the modelled continuous sound scenarios relevant to the Activity.

Table 6-27: Description of Scenarios Modelled for Continuous Sound Modelled at Annie-2 (Connell and Koessler 2025)

Scenario	Description	Number of continuous sound sources per scenario
1	Pre-lay activities represented by a single AHTS pre-laying anchors for drilling operations.	1x AHTS under DP
2	MODU positioning represented by a MODU generating no noise, assisted by 3 AHTS.	2x AHTS slow transit 1x AHTS under DP
3	Drilling operations represented by an anchored MODU drilling.	1x MODU anchored and drilling
4	Drilling operations represented by an anchored MODU drilling, assisted by a single AHTS.	1x MODU anchored and drilling 1x AHTS under DP
5	Drilling operations represented by an anchored MODU drilling, assisted by 2 AHTS.	1x MODU anchored and drilling 1x AHTS slow transit 1x AHTS under DP
9	MODU under DP over well centre	1x MODU under DP
10	MODU positioning under DP assisted by 3 AHTS	1x MODU under DP 1x Anchor Handler on bridle 2x Anchor Handler within 2 km of location (hooking up anchors)

6.6.2.5 Noise Effect Criteria

Different species groups perceive and respond to sound differently, therefore, a variety of exposure criteria are considered for the different types of impacts and species groups. The noise effect thresholds used in the sound modelling (Connell and Koessler 2025) for the impact and risk assessment represent best available science:

- Frequency-weighted accumulated sound exposure levels (SEL24h) from the NOAA Technical Guidance (NMFS 2024) and Southall et al. (2019) for the onset of auditory injury which includes PTS and TTS in marine mammals from non-impulsive noise sources.
- Un-weighted SPL for behavioural threshold for marine mammals of 120 dB re 1 µPa from non-impulsive sound sources, based on NOAA Technical Guidance (NMFS 2024).
- Frequency-weighted accumulated sound exposure levels (SEL24h) from Accomando et al. (2025) for the onset of PTS (198 dB re 1 μPa^2s) and TTS (198 dB re 1 μPa^2s) in marine turtles.

- Sound exposure guidelines for fish, fish eggs, and larvae (Popper et al. 2014) which includes quantitative criteria for TTS and recoverable injury and qualitative risk criteria for mortality and potential mortal injury, masking and behavioural effects.

6.6.3 Predicted Environmental Impacts and Risks

Potential impacts of continuous underwater sound emissions from the Activity are:

- change in ambient sound.

Potential risks from a change in ambient sound are:

- change in fauna behaviour, including:
  - marine mammals
  - marine turtles
  - fish
- auditory impairment (masking, temporary threshold shift (TTS), recoverable injury) or auditory injuries (mortality or potential mortal injuries, permanent threshold shift (PTS)) to marine fauna, including:
  - marine mammals
  - marine turtles
  - fish (including eggs and larvae).

Indirect effects may occur to conservation values of protected areas and First Nations cultural values and sensitivities. Impacts and risks to First Nations cultural heritage are assessed in Section 8.0.

Socio-economic impacts on commercial fisheries have not been evaluated further, as there are no discernible impacts to behaviour and distribution expected at the population level given the limited nature and scale of activities and associated impulsive underwater sound emissions.

6.6.4 Impact and Risk Evaluation

6.6.4.1 Impact: Change in Ambient Sound

Inherent Consequence Evaluation

Ambient underwater sound levels in the operational area are expected to range between 110 and 161 dB re 1 µPa (Duncan et al. 2013). Underwater sound modelling (Connell and Koessler 2025) predicted increased levels of underwater sound to 110 and 160 dB re 1 µPa would extend:

- 21.3 km to 0.1 km from a drilling operation represented by Scenario 5: MODU drilling operations with standby OSV and resupply (including 1 AHT on standby within 2 km under minimal thrust and 1 AHT doing resupply under DP).
- 25 km to 0.1 km from MODU positioning and support vessel operations represented by Scenario 10: MODU positioning under DP assisted by 3 AHTs (including 1x AHT on bridle and 2x AHTs within 2 km (hooking up anchors)).

As per Section 3.4, MODU positioning is expected to take 5 to 7 days, and drilling operations are expected to be intermittent and temporary. The consequence of a short-term change in ambient sound within (up to) 25 km of the activities has been evaluated as **Level 1**, as underwater sound will return to existing ambient levels following completion of the activity with no remedial or recovery work.

6.6.4.2 Risk: Change in Fauna Behaviour – Marine Mammals

Inherent Consequence Evaluation

Continuous sound emissions from the Activity may cause behavioural changes to marine mammals depending on the frequency and sound levels received.

Continuous sound levels greater than 120 dB re 1 µPa (SPL) has been adopted as a conservative behavioural change threshold for marine mammals (including otariid seals, low-frequency cetaceans, high-frequency cetaceans and very high-frequency cetaceans) (NMFS 2024).

The 120 dB re 1 µPa threshold was derived based on studies examining behavioural responses to drilling and dredging (NOAA 2018), referring to Malme et al. (1983), Malme et al. (1984), and Malme et al. (1986), which were considered in Southall et al. (2007). Malme et al. (1986) found that playback of drillship noise did not produce clear evidence of disturbance or avoidance for levels below 110 dB re 1 µPa (SPL), possible avoidance occurred for exposure levels approaching 119 dB re 1 µPa. Malme et al. (1984) determined that measurable reactions usually consisted of rather subtle short-term changes in speed and/or heading of the whale(s) under observation. It has been shown that both received level and proximity of the sound source is a contributing factor in eliciting behavioural reactions in humpback whales (Dunlop et al. 2017, Dunlop 2019).

Table 6-28 outlines the maximum distance to the behavioural response threshold for marine mammals predicted by the underwater sound modelling. See Appendix 7 - for further details of the modelling report (Connell and Koessler 2025). An 8 km radius around the operational area defines the furthest behavioural EMBA for marine mammals exposed to continuous sounds.

Table 6-28: Distance to the Behavioural Threshold for Marine Mammals

Marine Mammal Hearing Group	**Threshold SPL (Lp; dB re 1 µPa)**	**Maximum distance (km)**	**Relevant scenario/s (Connell and Koessler, 2025)**
Behavioural			
Marine mammals	120	0.44	Scenario 1: Drilling Prelays
		7.87	Scenario 2: Mooring
		1.10	Scenario 3: MODU Drilling
		1.13	Scenario 4: MODU Drilling + OSV Under Standby
		7.46	Scenario 5: MODU Drilling Operations with Standby OSV and resupply
		5.36	Scenario 9: MODU on DP
		8.02	Scenario 10: Mooring with MODU on DP

Table 6-29 provides details on the presence of marine mammals that are EPBC listed. Though there are a range of incidental impacts associated with vessel noise, including attraction, avoidance, and changes to vocalisation, the assessment below focuses on the potential behavioural changes that may occur; this informs the inherent consequence level attributed below. Where a EPBC listed species or species group requires a detailed discussion to justify inherent consequence evaluation, this discussion is provided in the section below. Potential presence within the behavioural EMBA is determined by the PMST report, overlap of BIAs and available sighting data for the region, including but not limited to:

- Gill et al. (2015) - 123 aerial surveys between 2002 and 2013 from western Bass Strait to eastern Great Australian Bight.

- Origin (2018) – aerial surveys between June 2012 – March 2013 in the Otway Basin.
- Watson et al. (2021) – coastal southern right whale sightings between 1993 and 2018 in south-eastern Australia (east of the South Australia / Victoria border).

Table 6-29: Inherent Consequence Levels - Continuous Sound - Behavioural Changes to Marine Mammals

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
Pinnipeds				
Australian fur-seal **New Zealand fur seal** EPBC Act: • Marine (all)	• May occur as per PMST report, however, are considered known to occur based on occurrence records available for the Otway (ALA 2024) and sightings by marine mammal observers during offshore campaigns (e.g. Seiche Environmental, 2020) • No BIAs overlap.	Section 6.6.4.2 describes the potential higher consequences of behavioural responses associated with the behavioural response threshold. Seals are frequently observed offshore and around vessels; marine mammal observers recorded sightings of hundreds of seals in close proximity to vessels over the course of the BMG Closure Project – Phase 1 in offshore Gippsland during 2024. Marine mammal observers for the project reported behaviours including foraging, milling and swimming (BMG / Gippsland MMO Sightings Sheet – Kennedy 2024).	Despite the conservation status of the Australian sea-lion, because of the insignificance of behavioural change to pinnipeds, the consequence is considered minor and local (small, variable, temporary behavioural changes within tens of metres of the source) impacts or disturbances to fauna.	Level 1
Very high-frequency cetaceans				
Pygmy/dwarf sperm whale **True porpoise** EPBC Act: • Vulnerable • Cetacean • Migratory.	• None identified in PMST report and therefore low likelihood of presence. • No BIAs overlapped.	Marine Mammal Observers observed the presence of dolphins in proximity to the vessel whilst on DP during the BMG Phase 1 decommissioning (located within the Gippsland basin >200km km east of this activity). Minor diverse behavioural changes (avoidance, no response, and attraction) to very high-frequency cetaceans are expected.	Minor local (small, variable, temporary behavioural changes within ~8 km from the source) impacts or disturbances to fauna.	Level 1
High-frequency cetaceans				
Dolphins (Risso's, dusky, common, Indian Ocean, bottlenose)	• May or likely to occur. • No BIAs overlapped.	Section 6.6.4.2 describes nominal behavioural responses associated with the behavioural response threshold. Dolphins are frequently observed offshore and around vessels; hundreds of sightings of dolphins	Minor local (small, variable, temporary behavioural changes within ~8 km from the source) impacts or disturbances to fauna.	Level 1

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
Toothed whales (killer, false killer) EPBC Act: • Cetacean • Migratory.		were recorded in close proximity to vessels on DP over the course of the BMG Closure Project – Phase 1 in offshore Gippsland during 2024. Marine mammal observers for the project reported behaviours including foraging, milling and swimming. Minor behavioural changes (avoidance, no response, and attraction) have the potential to occur (BMG / Gippsland MMO Sightings Sheet – Kennedy 2024).		
Low-frequency cetaceans				
Minke whale - EPBC Act: • Cetacean.	• May occur. • No BIAs overlapped.	Section 6.6.4.2 describes nominal behavioural responses associated with the behavioural response threshold. Minor behavioural changes (avoidance, no response, and attraction) have the potential to occur.	Minor local (small, variable, temporary behavioural changes within ~8 km from the source) impacts or disturbances to fauna.	Level 1
Sei whale - EPBC Act: • Vulnerable • Cetacean • Migratory	• Likely to occur. • No BIAs overlapped. • Between 2002 and 2013, 123 aerial surveys recorded 12 sighting of sei whales (Gill et al., 2015).	Section 6.6.4.2 describes nominal behavioural responses associated with the behavioural response threshold. Minor behavioural changes (avoidance, no response, and attraction) have the potential to occur.	Localised (~8 km from the source) and short-term impacts to species of recognized conservation value not affecting local ecosystem function. See further discussion below.	Level 2
Pygmy blue whale - EPBC Act: • Endangered • Cetacean • Migratory.	• Known to occur. • Foraging BIA overlapped. • During January to June, pygmy blue whales migrate through the operational area.	Section 6.6.4.2 describes nominal behavioural responses associated with the behavioural response threshold. Minor behavioural changes (avoidance, no response, and attraction) have the potential to occur. Change to blue whale song due to presence of ships increasing background noise levels (Melcon et al. 2012). Vocalisations of blue whales will continue in the presence of vessels, however changes in call level and rate are expected (McKenna 2011). Inferred modification of foraging efficiency because of effects on prey behaviour and masking.	The risk of changing blue whale individuals foraging behaviour is not expected to result in population level impacts. There is a limited spatial area (within ~8 km from the source) that will be potentially affected, which is slight compared to the total area available for foraging. There are no barriers or potential stressors introduced by the activity which would be expected to have a discernible effect on prey or predator distribution given the natural broad scale and dynamic distribution of both prey and predator. Overall opportunities for	Level 2

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
			foraging would not therefore be expected to be discernible from inherent variability. The potential impacts to individuals are therefore assessed as localised and short-term impacts to species of recognized conservation value not affecting local ecosystem function. See further discussion below.	
Fin whale - EPBC Act: • Vulnerable • Cetacean • Migratory.	• Likely to occur. • No BIAs overlapped.	Section 6.6.4.2 describes nominal behavioural responses associated with the behavioural response threshold. Modify song characteristics under increased background noise conditions, and temporary displacement (Castellote et al. 2012).	Localised (~8 km the source) and short-term impacts to species of recognized conservation value not affecting local ecosystem function. See further discussion below.	Level 2
Pygmy right whale - EPBC Act: • Cetacean • Migratory.	• May occur. • No BIAs overlapped.	Section 6.6.4.2 describes nominal behavioural responses associated with the behavioural response threshold. Minor behavioural changes (avoidance, no response, and attraction) have the potential to occur.	Minor local (small, variable, temporary behavioural changes within ~8 km from the source) impacts or disturbances to fauna.	Level 1
Southern right whale - EPBC Act: • Endangered • Cetacean • Migratory.	• Known to occur. • Migration and reproduction BIA overlapped. • During May-June and September-October southern right whales pass through the operational area to move to and from coastal reproduction areas.	Section 6.6.4.2 describes nominal behavioural responses associated with the behavioural response threshold. Potential increase in stress levels and vocal adaptation in response to increased background noise from shipping, inferred from studies of right whales in the northern hemisphere (Parks et al. 2010; Rolland et al. 2012). Note lactating southern right whales females with calves on calving grounds in Australia produce infrequent vocalisations that are low amplitude and, inferred as a strategy to decrease the risk of acoustically alerting predators (e.g. killer whales) of their presence (DCCEEW 2024b).	Localised (~8 km from the source) and short-term impacts to species of recognized conservation value not affecting local ecosystem function. The risk of southern right whale individuals avoiding the operational area is not expected to result in population level impacts because of the limited spatial area compared to the total migration and reproduction BIAs overlapped by the behavioural EMBA. See further discussion below.	Level 2

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
		Disturbance to resting southern right whales nearshore (within preferred calving/resting habitat) has been reported as being triggered by close encounters with humans, including surfers (DCCEEW 2024b) with mother and calf subsequently travelling 20 km within a few hours. As subsea noise generated by surfers is likely to be negligible, this may illustrate disturbance triggers could be both audible and/or visual (i.e. something observed as approaching which results in a threat response). Within Portland Harbour, which resides the Otway region, within the designated reproduction BIA for southern right whales and is an active hub for large international merchant ships, there are recurring sightings during the migration and reproduction seasons (ALA 2024). Noise generated by shipping activities is comparable to the noise generated by vessels likely to be used for the Activity.		
Humpback whale - EPBC Act: • Cetacean • Migratory.	• Likely to occur. • No BIAs overlapped.	Short-term behavioural impacts include alterations of dive patterns, swim speeds, swim orientation, group cohesiveness, behavioural state and changes in acoustic behaviour (Sprogis et al. 2020; Arranz et al. 2021).	Marine Mammal Observers were offshore throughout Amplitude Energy's recent BMG subsea wells decommissioning campaign in 2023/24. These activities were completed in the Gippsland basin, offshore Victoria, and are of similar nature to this Activity's well construction activities. MMO's reported whales near to and approaching vessels whilst on DP, no indications of disturbance were observed. Conservatively, potential impacts to humpback whales are assessed as Minor local (small, variable, temporary behavioural changes within ~8 km from the source).	Level 1

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
			Impacts are not expected to result in population level effects.	

Low-frequency Cetaceans

Low-frequency cetaceans include baleen whales such as sei whale, fin whale, southern right whale and blue whale. Potential presence within the behavioural EMBA and biologically important behaviours for listed threatened low-frequency cetaceans are summarised in Table 6-30.

Table 6-30: Low-frequency cetacean presence and biological important behaviours

Species	Biologically Important Behaviours	Duration of seasonal presence (including shoulder and peak periods)											
		J	F	M	A	M	J	J	A	S	O	N	D
Pygmy blue whale	Foraging BIA		P	P									
Southern right whale	Migration BIA				S							S	
	Reproduction BIA							P	P				
Sei whale	N/A												
Fin whale	N/A												

S – expected shoulder periods; P – Peak period

1. Blue Whale

A foraging BIA (annual high use) for the pygmy blue whale has been identified within the area where the behavioural criteria is reached (Figure 6-9). Several studies have demonstrated the presence of suitable foraging along the continental shelf between South Australia and Tasmania, with highly suitable habitat identified near the Bonney Coast (Ferreira et al. 2024). Pygmy blue whales typically occur in this region from November through June, with foraging activities typically peaking in February and March. This period often coincides with offshore activities in the region due to seasonally calmer weather conditions although other factors such as allocation of drilling equipment can also influence the scheduling of activities.

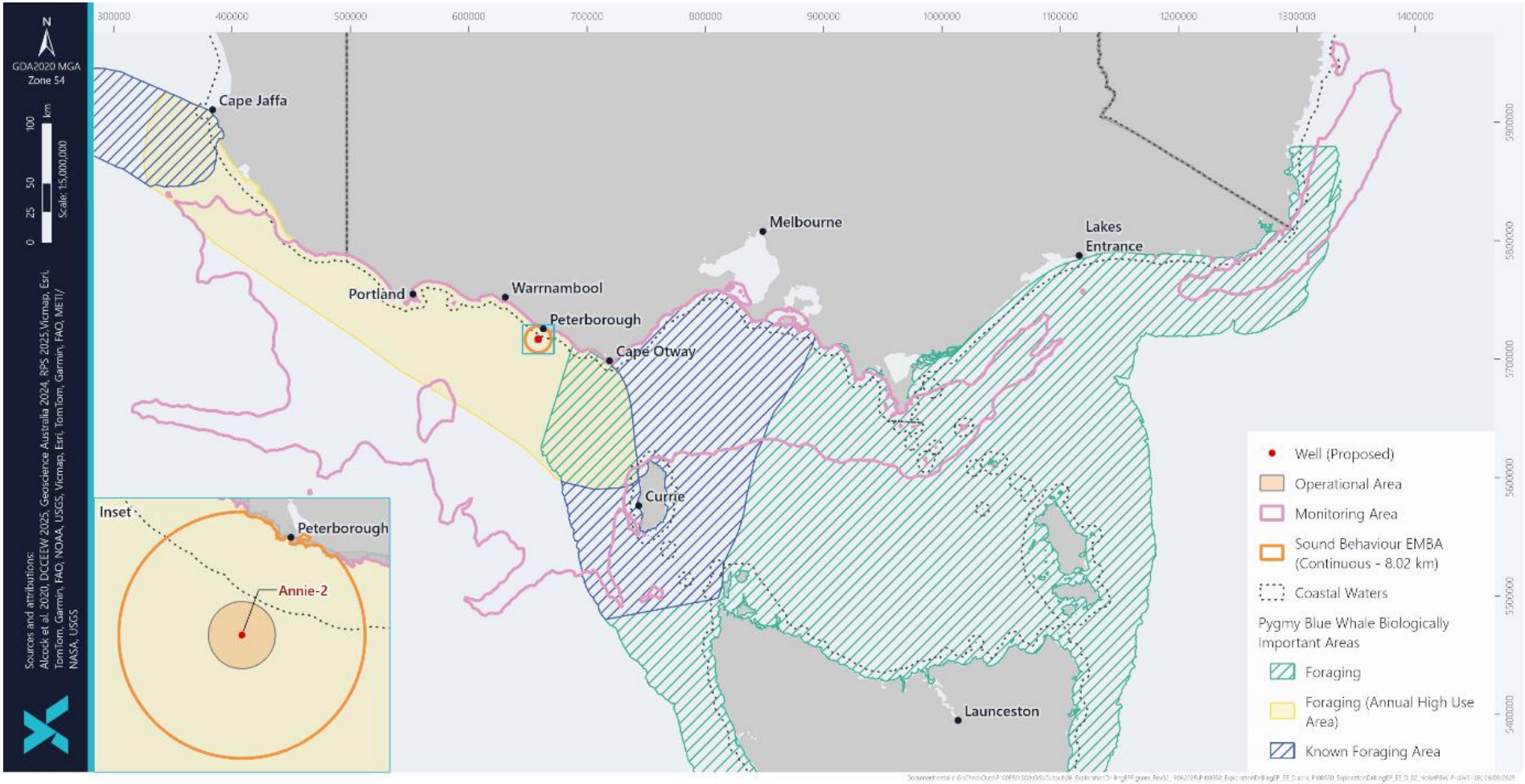


Figure 6-9: Pygmy Blue Whale BIAs and Noise EMBAs

The conservation management plan (CMP) for the blue whale provides for both subspecies of blue whales i.e., the Antarctic blue whale and the pygmy blue whale (DoE 2015a). The CMP includes several objectives and actions, with the ultimate objective being recovery of blue whale populations recovery to a level where they can be removed from the Threatened species list. Action A.2.3 of the CMP details that 'anthropogenic noise in BIAs will be managed such that any blue whale continues to utilise the area without injury and is not displaced from a foraging area'.

Following the hierarchy of controls, where practicable, the risk will be eliminated. However, it is considered that the CMP and guidance on key terms rationalises that risk elimination is not practicable for all vessel activities in the Otway region, such as shipping, ferries, research vessels and industry vessels, most of which would have the potential to displace a whale based on typical vessel sound source levels. The guidance on key terms therefore refers to risk reduction, rather than elimination.

The CMP identifies shipping noise and industrial noise as threats including impacts from masking, injury and displacement and classifies both threats as a minor consequence, where:

- Minor consequence is defined as – 'individuals are affected but no effect at population level'.

The CMP details that, given the behavioural impacts of noise on pygmy blue whales are largely unknown, a precautionary approach has been taken regarding assignment of possible consequences, hence even Minor consequences to individuals are considered a precautionary assessment in the CMP.

Given no population-level effects are predicted from shipping and industry noise, it follows that Action A.2.3 may not be needed to achieve the CMP objective which is ultimately aimed at population recovery: 'to minimise anthropogenic threats to allow for their conservation status to improve so that they can be removed from the EPBC Act threatened species list'. Though shipping and industry have been present offshore south-east Australia (and within blue whale BIAs) for decades, estimates indicate blue whale populations are recovering (e.g. Branch et al. 2004, Balcazar et al. 2015, McCauley et al. 2018), albeit at a slower rate compared to other species such as the humpback whale (Noad et al. 2011, TSSC 2022).

The potential consequence of behavioural impacts on blue whales has been rated as **Level 2**, based on:

- The conservative approach used in the sound modelling and use of the furthest distances to impact criteria.
- The CMP details that shipping and industrial noise are classed as a minor consequence: individuals are affected but no effect at a population level (DoE 2015a).
- The CMP details 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" (DoE 2015a). Activities which generate continuous sound emissions, such as drilling and vessel operations, do not have high intensity signals. Therefore, it is unlikely that they would cause injury or death to foraging PBW.
- The area of potential impact from the Activity is a relatively small percentage (<1%) of the high-density foraging BIA, which has a total area of 35,627 km^2 (Figure 6-9); hence any displacement from a very localised area around a vessel on DP would not be expected to impact on a whale's overall foraging success in the region. Consistent with the CMP assessment of industry and vessel noise, no population-level effects are predicted.
- The Offshore Victoria Whale Disturbance Risk Management Procedure for the activity (Section 12.10) will be followed during vessel DP operations; thus, control measures will be implemented to reduce the risk of behavioural impacts and ensure activities are consistent with the blue whale CMP.

- Upwelling and productivity in the region have been shown to be episodic, and of relatively low frequency in the vicinity of the Activity (Figure 6-10; Huang and Wang 2019). As such, any behavioural disturbances resulting from continuous underwater sound is not expected to significantly impact the foraging success of any individual.

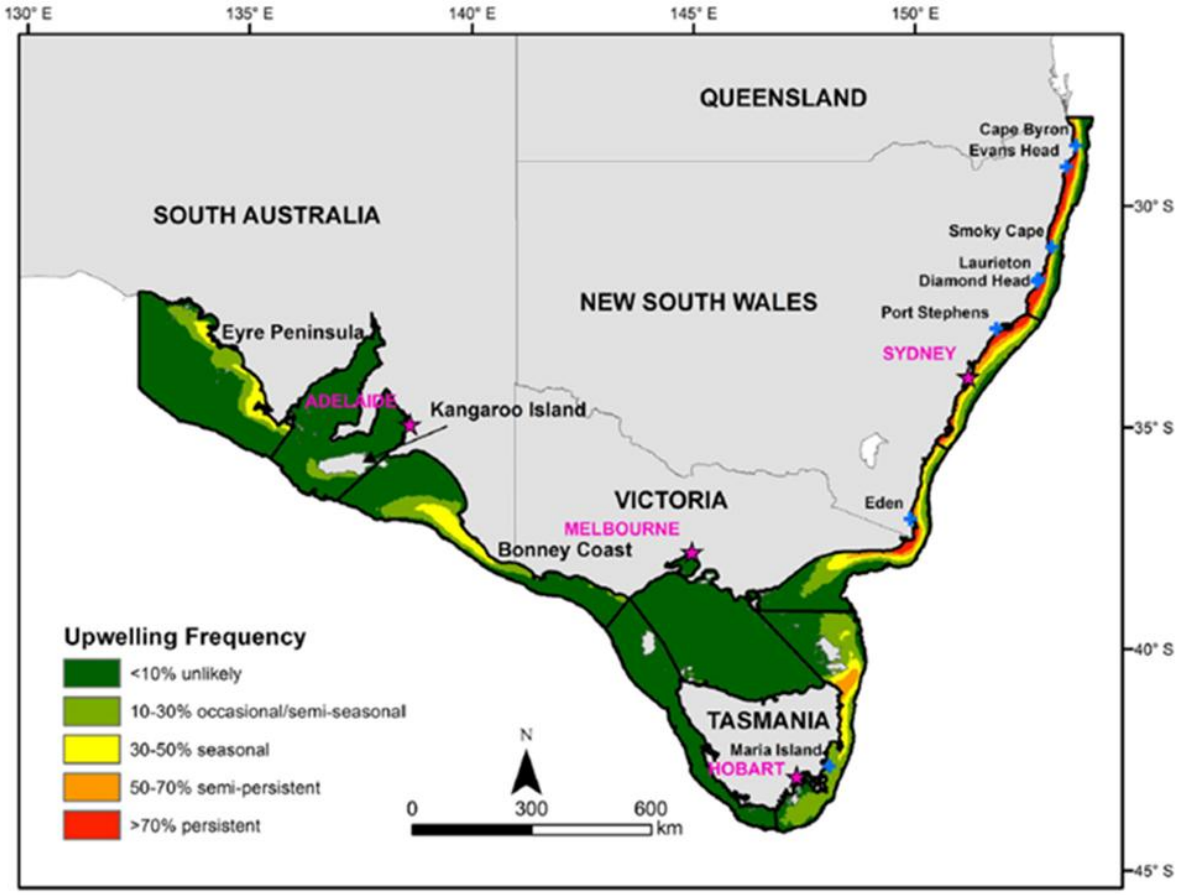


Figure 6-10: Upwelling Frequency in the Bass Strait

2. Southern Right Whale

Southern right whales migrate annually, spending winters in nursery areas in lower latitudes and summers in feeding grounds in higher latitudes. In Australia, southern right whales predominantly aggregate in coastal water reproductive areas, where they calve and nurse their young from May to October. The peak period of abundance typically occurs in late July and August (DCCEEW 2024b). During this time, southern right whales show preference to waters with less than 10 m depth (DSEWPaC 2012a, Charlton & Ward et al. 2019) and approximately 1 km from shore (DCCEEW 2024b). Breeding aggregations of southern right whales occur over a wide range across the entire Southern Australian coast, including areas adjacent to high vessel activity such as the Port of Portland and Port Phillip Bay. The recently released National Recovery Plan for the southern right whale identifies a reproduction BIA in Victorian waters off Warrnambool, within the region between Portland to Port Campbell (DCCEEW 2024b), to the east of the operational area. This area is listed as habitat critical to the survival of the southern right whale (Section 4.4.2).

The total number of southern right whale individuals identified in south-eastern Australia in a single whale-watching season increased from 3 individuals in 1993 to 368 individuals in 2017 (Stamation et al. 2020). Between 1993 and 2017, a total of 37 individual female southern right whales with calves were identified. Of these, 20 were identified west of Warrnambool, with 14 individual breeding females sighted at Logans Beach, (Stamation et al. 2020). A further 21 individual females were

sighted east of Warrnambool: 5 in the Great Ocean Road area, 3 near Wilson's Promontory, 10 off Flinders Island and the east coast of Tasmania, and 3 in New South Wales (Stamation et al. 2020).

The south-eastern population of southern right whales currently has only one established calving ground located at Logans Beach at Warrnambool in south-west Victoria (Watson et al. 2021). At least 93 calves were born at Logans Beach between 1980 and 2018 (Watson et al. 2021), however, there has been no increase in the average number of calves born annually at Logans Beach over the last 3 decades (Stamation et al. 2020). Southern right whales have long lifespans with relatively late maturation and long calving intervals (Charlton, 2017), therefore a significant increase in the number of calves born at Logans Beach is not expected until 2028 based on a theoretical model (Stamation et al. 2020). There are also records of female and calf pairs using bays outside Logan Beach, along the Victorian, Tasmanian and southern NSW coastline from May to September (Stamation et al. 2020). The behavioural EMBA overlaps a reproduction BIA for southern right whale (Figure 6-11). However, the behavioural EMBA would not be sufficiently large enough to restrict movement into or out of the reproductive area. Therefore, continuous underwater sound emissions from the Activity are not expected to impact individuals undertaking reproduction or present a barrier to movement for southern right whale into the reproductive BIA.

The Activity is within the migration BIA, which encompasses the majority of the ocean off the southern coast of Australia (Figure 6-11). Noise from vessels could elicit a behavioural response, such as avoidance. This could increase the energy requirements of whales at a time when their energy budgets are reduced. The Activity is not of the nature or scale that could present a barrier to migration, and the sound from Activity vessels would not be expected to significantly alter overall migration distances which can be multiple thousands of km's during the reproduction season (Watson et al. 2021).

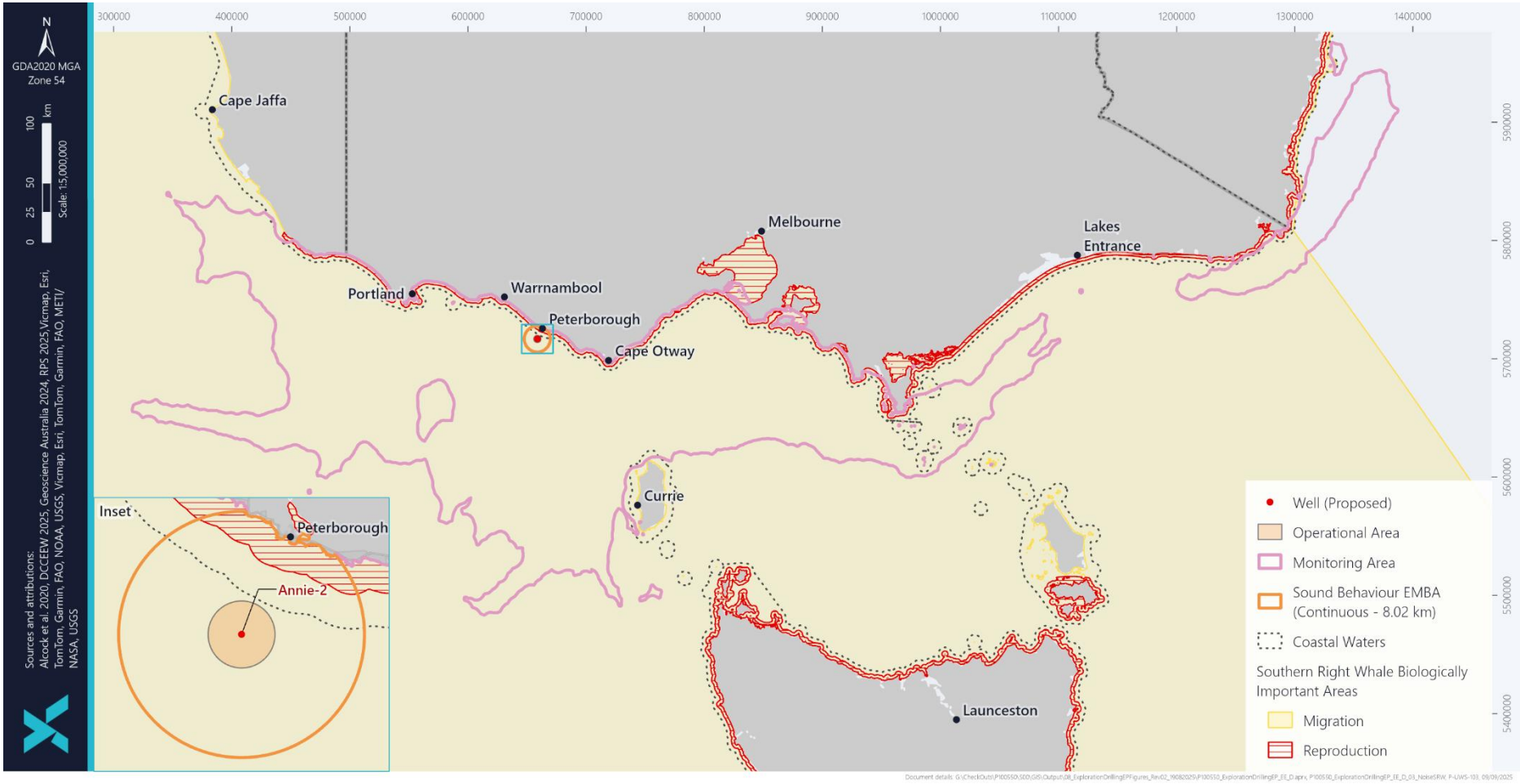


Figure 6-11: Southern Right Whale BIAs and Noise EMBAs

The extent and duration of impacts will vary based on the activities being undertaken. The National Recovery Plan for the Southern Right Whale (DCCEEW 2024b) identifies shipping noise and industrial noise both as a minor consequence for the south-east population, where:

- Minor consequence is defined as – 'individuals are affected but no effect at population level'.

The National Recovery Plan for the Southern Right Whale also details that, given the behavioural impacts of noise on southern right whales are largely unknown, a precautionary approach has been taken regarding assignment of possible consequences.

Southern right whales are considered to be particularly vulnerable to disturbance whilst nursing and resting (DCCEEW 2024b). Preferred habitat for these behaviours is in waters with depths less than 10 m and less than 1 km from shore.

Southern right whales are a highly mobile migratory species which travel thousands of kilometres between habitats used for essential life functions. As such, in the unlikely event that southern right whales are present nearby during the Activity, individuals may avoid the area where the behavioural disturbance criteria are reached. Given their mobility, this is unlikely to prevent their movements through the migration BIA or to/from the reproduction BIA including coastal aggregation areas.

The potential consequence of behavioural impacts on southern right whales has been rated as **Level 2**, based on:

- The conservative approach taken in the sound modelling and use of the furthest distances to impact criteria.
- The National Recovery Plan for the Southern Right Whale (DCCEEW 2024b) identifies shipping noise and industrial noise as threats classed as minor consequence: individuals are affected but no effect at a population level.
- The Offshore Victoria Whale Disturbance Risk Management Procedure for the activity (Section 12.10) will be followed during vessel operations; control measures will be implemented to reduce the risk of behavioural impacts and ensure activities are consistent with the southern right whale National Recovery Plan. The procedure requires consideration of avoidance of Habitat Critical to the Survival of southern right whales during peak sensitive seasons at the activity planning stage, and the implementation of control measures to avoid disturbance.
- The largest area of potential impact of (behavioural disturbance) from the activity is a small percentage of the migration and reproductive BIAs for the southern right whale (Figure 6-11). Disturbance would be limited to a very localised area around the Activity and would not be expected to prevent migration to or from reproduction BIAs.
- Southern right whales are a highly mobile migratory species that travel thousands of kilometres between habitats used for essential life functions (DCCEEW 2024b). Within the migration BIA, whales are highly dispersed and may reach and exit the coastline (reproduction BIA) along different trajectories through this area from one breeding cycle to another. Along the Australian coast, individual southern right whales use widely separated coastal areas (200–1,500 km apart) within a season, indicating substantial coast-wide movement. The longest movements are undertaken by non-calving whales, though calving whales have also been recorded at locations up to 700 km apart within a single season (DCCEEW 2024b).

3. Other Low-frequency Cetaceans

The EPBC PMST report identified the presence of several additional low-frequency cetacean species within the areas that may be impacted by sound, including the sei whale and fin whale (both EPBC-listed Vulnerable and Migratory).

Sei whales are primarily found in deep water oceanic habitats and are thought to complete long annual seasonal migrations from subpolar summer feeding grounds to lower latitude winter breeding grounds (TSSC 2015a). In Australian waters, sei whales have been infrequently recorded off Tasmania, New South Wales, Queensland, the Great Australian Bight, Northern Territory and Western Australia. The conservation advice for sei whales assesses the threat of anthropogenic noise and acoustic disturbance as minor, with the extent over which the threat may operate as moderate-large (TSSC 2015a). No specific management action for managing underwater sound emissions is defined in the conservation advice.

Fin whales are generally thought to undertake long annual migrations from higher latitude summer feeding grounds to lower latitude winter breeding grounds; however, the full extent of their distribution in Australian waters is uncertain (TSSC, 2015b). The conservation advice for sei whales assesses the threat of anthropogenic noise and acoustic disturbance as minor, with the extent over which the threat may operate as moderate-large (TSSC 2015a). No specific management action for managing underwater sound emissions is defined in the conservation advice.

Given the relatively short duration of activities and localised extent of potential behavioural changes, the consequence of this risk has been evaluated as **Level 2**, as underwater sound may result in localised, short-term impacts to species of conservation value while not affecting local ecosystem function.

Inherent Likelihood

The likelihood of behavioural changes to marine mammals depends on the continuous sound source and the potential presence of low-frequency cetaceans within the behavioural EMBA. For the risk event of behavioural changes to marine mammals to occur, the following combination of factors are required:

- Drilling operations, support vessel-based activities (vessel noise).
- Marine mammals present within 8.02 km of the continuous sound source produced during the Activity.

Table 6-31 details the frequency of recorded sightings of EPBC-listed marine mammals in the Otway Basin to infer presence within the behavioural EMBA, description of likelihood and the resulting inherent likelihood level for each marine mammal species.

Table 6-31: Inherent Likelihood Levels - Continuous Sound - Behavioural Changes to Marine Mammals

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Description of Likelihood	Inherent Likelihood
Pinnipeds			
New Zealand fur-seal **Australian fur-seal** EPBC Act: • Marine (All)	• May occur as per PMST report, however is, are considered known to occur based on records available for the Otway (ALA 2024) sightings by marine mammal observers during offshore campaigns (e.g. Seiche Environmental 2020).) • No BIAs overlap.	Fur seals may occur within the behavioural EMBA; however behavioural changes are unlikely. Amplitude Energy Marine Mammal Observers made hundreds of observations of fur seals proximal to vessels on DP during the BMG Phase 1 wells decommissioning campaign (2023/24). Minor behavioural changes (ranging from avoidance, no response, and attraction) to pinnipeds could occur. The risk event is considered unlikely though conceivable and	Unlikely (D)

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Description of Likelihood	Inherent Likelihood
		could occur at some time during the Activity.	
Very high-frequency cetaceans			
Pygmy / dwarf sperm whale **True porpoise** EPBC Act: • Vulnerable • Cetacean • Migratory.	• None identified in PMST report and therefore low likelihood of presence. • No BIAs overlapped. • <50 pygmy sperm whales recorded across the Otway between 1988 and 2024. None of these sightings occurred proximal to the Activity operational area (Atlas of Living Australia, occurrence records 2024).	A freak combination of factors would be required for very high-frequency cetaceans to be present within the behavioural EMBA during activities generating continuous sound emissions and for noise from the Activity to have a discernible effect. Any individuals proximal to the activities may or may not alter behaviour.	Remote (E)
High-frequency cetaceans			
Dolphins (Risso's, dusky, common, Indian Ocean, bottlenose) **Toothed whales** (killer, false killer) - EPBC Act: • Cetacean • Migratory.	• May or likely to occur. • No BIAs overlapped. • Gill et al. (2015) - 390 dolphin sightings and 83 sightings of toothed whales (2002-2013).	High-frequency cetaceans may or are likely to occur (depending on the species) within the behavioural EMBA; however behavioural changes are unlikely. Amplitude Energy Marine Mammal Observers made hundreds of observations of dolphins including, common and bottlenose dolphins, and pilot whales proximal to vessels on DP during the BMG Phase 1 wells decommissioning campaign (2023/24). Minor behavioural changes (ranging from avoidance, no response, and attraction) to high-frequency cetaceans could occur. The risk event is considered conceivable and could occur at some time during the Activity.	Unlikely (D)
Low-frequency cetaceans			
Minke whale - EPBC Act: • Cetacean.	• May occur. • No BIAs overlapped. • Gill *et al*. (2015) - one sighting of an individual minke whale (2002-2013).	A freak combination of factors would be required for a minke whale to be present within the behavioural EMBA during activities generating continuous sound emissions, and for noise from the Activity to have a discernible effect.	Remote (E)

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Description of Likelihood	Inherent Likelihood
		Any individuals proximal to the activities may or may not alter behaviour. Behavioural changes to minke whales are not expected to occur from Activity continuous underwater sound emissions.	
Sei whale - EPBC Act: • Vulnerable • Cetacean • Migratory	• Likely to occur. • No BIAs overlapped. • Gill et al. (2015) - 12 sightings of 14 individual sei and like sei whales (2002-2013).	A rare combination of factors would be required for a sei whale to be present within the behavioural EMBA during activities generating continuous sound emissions and for noise from the Activity to have a discernible effect. Any individuals proximal to the activities may or may not alter behaviour. The risk event is considered conceivable and could occur at some time during the Activity but is unlikely.	Unlikely (D)
Pygmy blue whale - EPBC Act: • Endangered • Cetacean • Migratory.	• Known to occur. • Foraging and distribution BIAs overlapped. • During January to June, pygmy blue whales migrate through the operational area. • Origin (2018) – sightings of 120 individuals in the Otway Basin (2012-2013). • Approximately 221 observation records of pygmy blue whales were identified off the coast of Victoria between 2000 and 2024 (Atlas of Living Australia 2025).	The risk event could occur under specific circumstances such that a blue whale is present within the behavioural EMBA during activities generating continuous sound emissions. Pygmy blue whales are known to occur within the behavioural EMBA; any individuals proximal to the activities may or may not alter behaviour. Therefore, the risk event is conservatively considered to be possible.	Possible (C)
Fin whale - EPBC Act: • Vulnerable • Cetacean • Migratory.	• Likely to occur. • No BIAs overlapped. • Gill *et al*. (2015) - 7 sightings of 8 individual fin and like fin whales (2002-2013).	A rare combination of factors would be required for a fin whale to be present within the behavioural EMBA during activities generating continuous sound emissions and for noise from the Activity to have a discernible effect. Any individuals proximal to the activities may or may not alter behaviour. The risk event is considered conceivable and could occur at some time during the Activity but is unlikely.	Unlikely (D)
Pygmy right whale	• May occur.	A freak combination of factors would be required for a pygmy	Remote (E)

Marine Mammals (EPBC Act Listing)	Presence within Behavioural EMBA	Description of Likelihood	Inherent Likelihood
EPBC Act: • Cetacean • Migratory	• No BIAs overlapped. • Gill *et al.* (2015) - 1 sighting of 100 individual pygmy right whales (2002-2013).	right whale to be present within the behavioural EMBA during activities generating continuous sound emissions, and for noise from the Activity to have a discernible effect. Any individuals proximal to the activities may or may not alter behaviour. Behavioural changes to pygmy right whales are not expected to occur from Activity continuous underwater sound emissions.	
Southern right whale - EPBC Act: • Endangered • Cetacean • Migratory.	• Known to occur. • Migration and reproduction BIA overlapped. • During May-June and September-October southern right whales pass through the operational area to move to and from coastal aggregation areas. • Watson *et al*. (2021) - 375 individual southern right whales (including 48 breeding females) were identified in south-eastern Australia (east of the SA/Victorian border) (1993-2018).	The risk event could occur under specific circumstances such that a southern right whale is present within the behavioural EMBA during activities generating continuous sound emissions. Southern right whales are known to occur within the behavioural EMBA; any individuals proximal to the activities may or may not alter behaviour. Therefore, the risk event is conservatively considered to be possible.	Possible (C)
Humpback whale - EPBC Act: • Cetacean • Migratory.	• Likely to occur. • No BIAs overlapped. • Gill *et al.* (2015) - 10 sightings of 18 individual humpback whales (2002 – 2013).	The risk event could occur under specific circumstances such that a humpback whale is present within the behavioural EMBA during activities generating continuous sound emissions. Humpback whales are likely to occur within the behavioural EMBA; any individuals proximal to the activities may or may not alter behaviour. Therefore, the risk event is conservatively considered to be possible.	Possible (C)

Inherent Risk Severity

The highest inherent risk severity of behavioural changes to marine mammals from continuous sound emissions is considered **Moderate**. Table 6-32 lists the inherent risk severity for each marine mammal species.

Table 6-32: Inherent Risk Severity – Continuous Sound – Behavioural Changes to Marine Mammals

Marine Mammals	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Severity
Pinnipeds			
• New Zealand fur-seal • Australian fur-seal	1	D	Low
Very high-frequency cetaceans			
• Pygmy/dwarf sperm whale, true porpoises	1	E	Low
High-frequency cetaceans			
• Dolphins (Rissos's, dusky, common, Indian Ocean bottlenose, bottlenose) • Toothed whales (killer, false killer)	1	D	Low
Low-frequency cetaceans			
Minke whale	1	E	Low
Sei whale	2	D	Low
Pygmy blue whale	2	C	Moderate
Fin whale	2	D	Low
Pygmy right whale	1	E	Low
Southern right whale	2	C	Moderate
Humpback whale	1	C	Low

6.6.4.3 Risk: Auditory Impairment or Injury – Marine Mammals

Inherent Consequence Evaluation

Auditory impairment and injury include both permanent and temporary hearing impairment (PTS and TTS) and any other form of physical harm arising from anthropogenic sources of underwater noise (DAWE 2021).

Depending on the sound levels received, continuous sound emissions may cause auditory impairment or injury to marine mammals:

- Auditory impairment / auditory temporary threshold shift (TTS) -- an animal's hearing threshold is elevated and recoverable over time.
- Auditory injury / auditory permanent threshold shift (PTS) – an animal's hearing threshold is elevated and never recovers.

Underwater sound modelling predicted the distances that continuous TTS and PTS thresholds for marine mammals were reached (Connell and Koessler 2025). TTS and PTS thresholds for marine mammals are based on a cumulative metric that assumes a receptor is consistently exposed to a defined sound exposure level for a 24-hour period (SEL24h). Distances predicted for the onset of TTS and PTS thresholds (SEL24h) (Connell and Koessler 2025) infer that the continuous underwater sound emissions from the Activity have the potential to cause:

- Potential TTS within marine mammals within a maximum range of ~4 km.

- Potential PTS within marine mammals within a maximum range of ~610 m.

Table 6-33 summarises the continuous TTS and PTS thresholds for marine mammals and the predicted maximum distances that will be reached by continuous sound from the Activity (Connell and Koessler 2025).

Table 6-33: Distance to TTS and PTS Thresholds for Marine Mammals

Marine Mammal Hearing Group	Threshold SEL_{24h}, dB re 1 μPa^2 s	Maximum distance (km)	Relevant scenario/s (Connell and Koessler, 2025)
TTS			
Low-frequency cetaceans	177	3.88	Scenario 10: Mooring with MODU on DP
High-frequency cetaceans	181	0.71	Scenario 10: Mooring with MODU on DP
Very high-frequency cetaceans	161	0.87	Scenarios 9: MODU on DP Scenario 10: Mooring with MODU on DP
Otariid seals	179	0.68	Scenario 10: Mooring with MODU on DP
PTS			
Low-frequency cetaceans	197	0.61	Scenario 10: Mooring with MODU on DP
High-frequency cetaceans	201	0.03	Scenario 2: Mooring Scenario 10: Mooring with MODU on DP
Very high-frequency cetaceans	181	0.11	Scenario 5: MODU Drilling operations with standby OSV and resupply
Otariid seals	199	0.03	Scenario 10: Mooring with MODU on DP

The maximum distance where the potential onset of auditory impairment and injury may occur is 3.88 km, which is referred to as the potential auditory impairment and injury EMBA for marine mammals.

Table 6-34 provides details on the presence of EPBC-listed marine mammals within the auditory impairment/injury EMBA, the potential impairment or injury that may occur and the resulting inherent consequence level for each marine mammal species.

Table 6-34: Inherent Consequence Levels – Continuous Sound – Auditory Impairment or Injury to Marine Mammals

Marine Mammals (EPBC Act Listing)	Presence within Auditory Impairment or Injury EMBA	Potential auditory impairment or injury	Description of Potential Consequence	Inherent Consequence
Pinnipeds				
New Zealand fur-seal **Australian fur-seal** EPBC Act: • Marine (all)	May occur as per PMST report, however, are considered known to occur based on occurrence records available for the Otway (ALA 2024) and sightings by marine mammal observers during offshore campaigns (e.g. Seiche Environmental 2020) No BIAs overlap.	For the onset of TTS and PTS to occur, pinnipeds need to remain in-water within 680 m and 30 m of the continuous sound sources for 24-hours, respectively (Table 6-33). Seals have been observed to dive and stay submerged for up to two hours (Blix 2018). Seals will then surface from dives for oxygen recovery. The longer the dive the longer the surface recovery time required (Blix 2018). It is not credible for seals to remain in-water for 24-hours for the onset of TTS and PTS to occur based on the limited dive duration.	Not credible	Not applicable
Very high-frequency cetaceans				
Pygmy / dwarf sperm whale **True porpoise** EPBC Act: • Vulnerable • Cetacean • Migratory.	• None identified in PMST report and therefore low likelihood of presence. • No BIAs overlapped.	For the onset of TTS and PTS to occur, very high-frequency cetaceans need to remain within 870 m and 110 m of continuous sound sources for 24-hours, respectively (Table 6-33). It is not credible for very high-frequency cetaceans to remain within 870 m and 110 m of continuous sound sources for 24-hours for the onset of TTS and PTS to occur given the absence of BIAs in the operational area.	Not credible	Not applicable
High-frequency cetaceans				
Dolphins (Risso's, dusky, common, Indian Ocean, bottlenose)	• May or likely to occur. • No BIAs overlapped.	For the onset of TTS and PTS to occur, high-frequency cetaceans need to remain within 710 m and 30 m of continuous sound sources for 24-hours, respectively (Table 6-33). It is not credible for high-frequency cetaceans to remain within 710 m and 30 m of continuous sound sources for 24-hours for the onset of TTS and PTS to occur given the absence of BIAs in the operational area.	Not credible	Not applicable

Marine Mammals (EPBC Act Listing)	Presence within Auditory Impairment or Injury EMBA	Potential auditory impairment or injury	Description of Potential Consequence	Inherent Consequence
Toothed whales (killer, false killer) EPBC Act: • Cetacean • Migratory.		Amplitude Energy have observed during the BMG decommissioning campaign, dolphins approach DP vessels whilst undertaking foraging behaviours. However, observations indicate that groups and individuals transit quickly through the area, and do not remain in the area long enough for TTS and PTS to occur.		
Low-frequency cetaceans				
Minke whale - EPBC Act: • Cetacean.	• May or likely to occur. • No BIAs overlapped.	For the onset of TTS and PTS to occur, low-frequency cetaceans need to remain within 3.88 km and 0.61 km of continuous sound sources for 24-hours, respectively (Table 6-33). Previous studies which tracked humpback whales recorded average swimming speeds to range from 2.5 – 4.0 km/h, with some individuals swimming rapidly up to 15.6 km/h (Noad and Cato 2007). The operational area does not support habitats that encourage sedentary behaviours given the absence of BIAs in the operational area. Therefore, it is not credible for minke, sei, fin, pygmy blue and humpback whales to remain within 3.88 and 0.61 km of continuous sound sources for 24-hours for the onset of TTS and PTS. During recent DP vessel activities in Gippsland, there were hundreds of observations of whales (mainly humpback whales); whales were often observed in close range to vessels on DP. All whales were moving through the region, and at no point were whales observed to be nearing TTS or PTS exposure times.	Not credible	Not applicable
Sei whale - EPBC Act: • Vulnerable • Cetacean • Migratory			Not credible	Not applicable
Fin whale - EPBC Act: • Vulnerable • Cetacean • Migratory.			Not credible	Not applicable
Humpback whale - EPBC Act: • Cetacean • Migratory.			Not credible	Not applicable
Pygmy blue whale - EPBC Act: • Endangered	• Known to occur. • Foraging BIA overlapped.	Despite the overlap with foraging BIA, it is not credible for blue whales to remain within 3.88 and 0.61 km of continuous sound sources for 24-hours for the onset of TTS and PTS to occur based on:	Not credible	Not applicable

Marine Mammals (EPBC Act Listing)	Presence within Auditory Impairment or Injury EMBA	Potential auditory impairment or injury	Description of Potential Consequence	Inherent Consequence
• Cetacean • Migratory.	• During January to June, blue whales migrate through the operational area.	• A type of foraging behaviour (observed in tagged blue whales) involving area restricted searches (ARS) was reported by Bailey et al. (2009). The area that the ARS occurred over ranged from 10 km up to 360 km in radius. Owen et al. (2016) also reported on ARS occurring across an area of 220 km^2 for a satellite tagged blue whale on the west coast of Australia. The maximum Activity TTS contours cover an area of <20 km^2. Therefore, if ARS were to occur it could be expected to extend well beyond any Activity TTS contour and preclude the onset of TTS. • If whales were to interrupt their foraging within the TTS zone to feed on a discrete patch of krill for >24 hours, the movement of plankton (and therefore krill) with the currents would move the feeding zone passively through the TTS zone before TTS onset. Minimum average currents in the operational area are around 0.15 m/s in May (RPS 2019). A discrete patch of krill moving with the plankton (and therefore the current) would move at 540 m/h, moving through the TTS zone well before TTS onset. • Blue whales have been recorded swimming at mean speeds of 2.8 km/hr +/- 2.2 km/hr whilst migrating and foraging (Owen, Jenner and Jenner, 2016) or faster (Möller *et al.* 2020). Sears and Perrin (2017) suggest blue whales most commonly swim at speeds of 3–6 km/hr but they can attain travel speeds of 7–20 km/hr. Accounting for swimming speeds across this range, a whale would be expected to move through any TTS zone associated with the Activity well before TTS onset. • Recent activities within the Otway have overlapped pygmy blue whale foraging periods and blue whales were observed during the activity. Reported behaviours were in line with published information on foraging behaviours and movements, that is, blue whales were not stationary for extended periods of time, or significantly restricted in their range, and were never considered to be at risk of TTS (MMO observation data, pers comms Beach Energy 2022).		
Southern right whale - EPBC Act: • Endangered • Cetacean	• Known to occur. • Migration and reproduction BIAs overlapped.	It is not considered credible for southern right whales to remain within 3.88 and 0.61 km of continuous sound sources for 24-hours for the onset of TTS and PTS to occur based on: • TTS and PTS values do not incorporate animal movement (necessary for migration) which prevent southern right whales reaching the range required for auditory impairment and injury to occur.	Not credible	Not applicable

Marine Mammals (EPBC Act Listing)	Presence within Auditory Impairment or Injury EMBA	Potential auditory impairment or injury	Description of Potential Consequence	Inherent Consequence
• Migratory.	• During May-June and September-October southern right whales pass through the operational area to move to and from coastal reproduction areas.	• Southern right whales are highly mobile species and are known to move throughout the region. Connecting range movements will prevent southern right whales to remain within the range for over 24-hours required for auditory impairment and injury to occur. The longest movements are undertaken by non-calving whales, though calving whales have also been recorded at locations up to 700 km apart within a single season (DCCEEW 2024b). • The operational area and TTS/PTS contours of the activity overlap the reproduction BIA (HCTS) or preferred calving/nursing habitat for southern right whales (<10 m water depth and within 1 km of shore). There is no evidence of high-site fidelity for southern right whales within the operational area, or within the TTS or PTS radii of the activity. As a result, southern right whales that may occur in the vicinity of the activity, are expected to be highly mobile and pass through the area before auditory impairment / injury can manifest.		

Details in Table 6-34 suggest that the presence of marine mammals for extended (≥ 24 hour) periods, and consistently within close proximity to continuous sound sources, is not plausible.

Inherent Likelihood

Not applicable.

Inherent Risk Severity

Not applicable.

6.6.4.4 Risk: Change in Fauna Behaviour – Marine Turtles

Inherent Consequence Evaluation

Continuous sound emissions may cause behavioural changes to marine turtles depending on the distance between individual turtles and a continuous sound source. Relative risk criteria proposed by Popper et al. (2014) suggests that continuous sound sources have a high chance of causing behavioural change to turtles within the near vicinity of a source (tens of metres), and a moderate chance within the intermediate vicinity of a source (hundreds of metres). The relative risk reduces to a low chance of behavioural change within the far (thousands of metres) vicinity of a sound source (Popper et al., 2014). As such, continuous underwater sound emissions from the Activity have the potential to cause behavioural changes to marine turtles.

The operational area is used as a conservative behavioural EMBA for turtles exposed to continuous sounds. Table 6-35 provides details on the presence of EPBC-listed marine turtles within the operational area, potential behavioural changes that may occur and the resulting inherent consequence level for each marine turtle species.

Table 6-35: Inherent Consequence Levels - Continuous Sound - Behavioural Changes to Marine Turtles

Marine Turtles (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
Loggerhead turtle - EPBC Act: • Endangered • Marine • Migratory.	• Likely to occur. • No BIAs overlapped.	Increase swimming speeds, and induce diving inferred from studies of other turtle species.	Despite the conservation status of the loggerhead turtle, because of the insignificance of behavioural change to marine turtles, the consequence is considered minor and local (small, variable, temporary behavioural changes within tens of metres of the source) impacts or disturbances to fauna.	Level 1
Green turtle - EPBC Act: • Vulnerable • Marine • Migratory.	• May occur. • No BIAs overlapped.	Observed green turtles increase swim speed and induce diving from approaching vessels travelling at speeds less than 4 m/s in	Despite the conservation status of the green turtle, because of the insignificance of behavioural change to marine turtles, the consequence is considered minor and	Level 1

Marine Turtles (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
		open waters (Hazel *et al*. 2007).	local (small, variable, temporary behavioural changes within tens of metres of the source) impacts or disturbances to fauna.	
Leatherback turtle - EPBC Act: • Endangered • Marine • Migratory.	• Likely to occur. • No BIAs overlapped.	Increase swimming speeds, and induce diving inferred from studies of other turtle species.	Despite the conservation status of the leatherback turtle, because of the insignificance of behavioural change to marine turtles, the consequence is considered minor and local (small, variable, temporary behavioural changes within tens of metres of the source) impacts or disturbances to fauna.	Level 1

Inherent Likelihood

The likelihood of behavioural changes to marine turtles depends on the temporal overlap of the potential presence of marine turtles whilst continuous sound sources are in the operational area, and the sensitivity of different species and individuals to noise.

A high likelihood of behavioural changes to marine turtles requires the following combination of factors:

- Drilling operations, support activities (vessel noise)
- Marine turtles present within tens of metres of continuous sound source.

The Atlas of Living Australia (Atlas of Living Australia) and the Victoria Biodiversity Atlas (VBA) was reviewed to understand the potential likelihood of marine turtle presence within the operational area (ALA 2025; Victorian DELWP 2025). No observations or occurrences of loggerhead turtles, green turtles or leatherback turtles were recorded within the behavioural EMBA. Therefore, the likelihood for all species is considered to be **Remote (E)**.

Inherent Risk Severity

The highest inherent risk severity of behavioural changes to marine turtles from continuous sound emissions is considered to be **Low** (Table 6-36).

Table 6-36: Inherent Risk Severity - Continuous Sound - Behavioural Change to Marine turtles

Species	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Severity
Loggerhead turtle	1	E	Low
Green turtle	1	E	Low

Species	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Severity
Leatherback turtle	1	E	Low

6.6.4.5 Risk: Auditory Impairment or Injury - Marine Turtles

Inherent Consequence Evaluation

Depending on the sound levels received, continuous sound emissions may cause auditory impairment or injury to marine turtles from the onset of TTS and PTS, respectively.

Underwater sound modelling (Connell and Koessler 2025) predicted the continuous TTS and PTS thresholds for turtles was reached within distances listed in Table 6-37.

TTS and PTS thresholds for marine turtles are based on SEL_{24h} which assumes a turtle is consistently exposed to threshold levels for a 24-hour period. Distances predicted by the sound modelling (Connell and Koessler 2025) for the onset of TTS and PTS thresholds (SEL_{24h}) are listed in Table 6-37.

Table 6-37 infers the continuous underwater sound emissions from the Activity have the potential to cause:

- Potential TTS to turtles within 1.16 km
- Potential PTS to turtles within 500 m.

The EMBA for marine turtles exposed to continuous sounds is relatively small (1.16 km radius from the noise source that can operate throughout the operational area).

Table 6-37: Distance to TTS and PTS Threshold for Marine Turtles

Threshold Type	Threshold Weighted SEL_{24h} (dB re 1 μPa^2 s)	Maximum distance (km)	Relevant scenario/s
TTS	178	1.16	Scenario 10: MODU positioning under DP assisted by 3 AHTS
PTS	198	0.5	Scenario 10: MODU positioning under DP assisted by 3 AHTS

Given the absence of BIAs in the operational area, it is not considered credible for individual marine turtles to remain within 1.16 km and 500 m of continuous sound sources for 24-hours. As such, the onset of TTS and PTS to marine turtles as a result of the Activity is not anticipated. Any marine turtles observed in the operational area would be expected to be transiting through since the operational area does not support habitats which encourage sedentary behaviours.

Therefore, auditory impairments or injuries to marine turtles as a result of continuous sound emissions from the Activity is not evaluated further.

Inherent Likelihood

Not applicable.

Inherent Risk Severity

Not applicable.

6.6.4.6 Risk: Change in Fauna Behaviour – Fish

Inherent Consequence Evaluation

Sound pressure changes may be detected by fish with a swim bladder, as the gas within the swim bladder changes as a result of changing sound pressure. If the swim bladder is near the ear or connected to the hearing system, the hearing sensitivity is greater (Popper et al. 2014). Fish without a swim bladder cannot detect sound pressure. However, most fish species are expected to be able to detect particle motion. The most relevant criteria for considering potential impacts on fish and shellfish are considered to be those provided in the Sound Exposure Guidelines for Fishes and Sea Turtles (Popper et al. 2014). Fish species are grouped into hearing sensitivity categories defined by a number of factors such as their hearing anatomy, particle motion detection, the use of sound during navigation or mating and the presence or absence of a swim bladder:

- Fish with no swim bladder that are sensitive to particle motion and therefore only to a narrow band of frequencies (e.g. cartilaginous fish).
- Fish with swim bladders that do not appear to play a role in hearing (e.g. Scombridae). Therefore, they are only sensitive to particle motion and only show sensitivity to a narrow band of frequencies.
- Fish with swim bladders involved in hearing. These species are sensitive to both particle motion and sound pressure. The swim bladder may be close to but not intimately connected to the ear (e.g. eels) or mechanically linked to the ear (e.g. Clupeidae), with the latter representing fish of the greatest hearing sensitivity.
- Eggs and larvae.

Continuous sound emissions may cause behavioural changes to fish including eggs and larvae depending on the distance between fish and a continuous sound source. Relative risk criteria proposed by Popper et al. (2014) suggest a moderate risk of behavioural change to fish with no swim bladders, or those with bladders not involved in hearing, or to fish eggs or larvae, within the near (tens of metres) and intermediate (hundreds of metres) vicinity of a continuous sound source. Fish with swim bladders involved in hearing have a high risk of behavioural change within the near vicinity (tens of metres), and a moderate chance within the intermediate vicinity (hundreds of metres) from a continuous sound source (Popper *et al*. 2014).

There is risk of change in fish behaviour within hundreds of metres of vessels operating within the operational area. As a conservative approach to identify fish BIAs and habitats, the operational area is used as a conservative behavioural EMBA for fish including eggs and larvae exposed to continuous sound.

Table 6-38 provides details on the presence of fish species that are EPBC-listed and have First Nations cultural significance within the behavioural EMBA, potential behavioural changes that may occur and the resulting inherent consequence level for each species.

Table 6-38: Inherent Consequence Levels - Continuous Sound - Behavioural Changes to Fish

Fish (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
White shark - EPBC Act: • Vulnerable	• Known to occur.	No detectable relationship between vessel activity and shark residency for any	Minor local (small, variable, temporary behavioural changes within tens of metres of	Level 1

Fish (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
• Migratory.	• No BIAs overlapped. • Seasonal presence in southern Australia during early summer.	species. This observation suggests habituation of sharks to high levels of vessel activity (Rider et al. 2021). Anthropogenic underwater sounds may trigger investigative or aversive behaviour in some species of shark (Chapuis et al. 2019). No significant behavioural change to sharks from continuous sound is anticipated.	the continuous sound source) impacts or disturbances to fauna.	
Eastern school shark - EPBC Act: • Critically endangered.	• May occur. • No BIAs overlapped.	No detectable relationship between vessel activity and shark residency for any species. This observation infers habituation of sharks to high levels of vessel activity (Rider et al. 2021). No significant behavioural change to sharks from continuous sound is anticipated.	Minor local (small, variable, temporary behavioural changes within tens of metres of the continuous sound source) impacts or disturbances to fauna.	Level 1
Shortfin mako EPBC Act: Migratory.	• Likely to occur. • No BIAs overlapped.	No detectable relationship between vessel activity and shark residency for any species. Anthropogenic underwater sounds may trigger investigative or aversive behaviour in some species of shark (Chapuis *et al*. 2019). No significant behavioural change to sharks from continuous sound is anticipated.	Minor local (small, variable, temporary behavioural changes within tens of metres of the continuous sound source) impacts or disturbances to fauna.	Level 1
Grey nurse shark (East Coast Population) EPBC Act: • Migratory. • Critically Endangered	• Likely to occur. • No BIAs overlapped.	No detectable relationship between vessel activity and shark residency for any species. This observation infers	Minor local (small, variable, temporary behavioural changes within tens of metres of the continuous sound	Level 1

Fish (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
		habituation of sharks to high levels of vessel activity (Rider et al. 2021). No significant behavioural change to sharks from continuous sound is anticipated.	source) impacts or disturbances to fauna.	
Porbeagle / mackerel shark - EPBC Act: • Migratory.	• Likely to occur. • No BIAs overlapped.	No detectable relationship between vessel activity and shark residency for any species. This observation infers habituation of sharks to high levels of vessel activity (Rider et al. 2021). No significant behavioural change to sharks from continuous sound is anticipated.	Minor local (small, variable, temporary behavioural changes within tens of metres of the continuous sound source) impacts or disturbances to fauna.	Level 1
Australian grayling - EPBC Act: • Vulnerable.	• Known to occur. • No BIAs overlapped.	Vessel noise can change fish behaviour (e.g. induce avoidance, alter swimming speed and direction, and alter schooling behaviour) (Popper et al. 2014).	Minor local (small, variable, temporary behavioural changes within tens of metres of the continuous sound source) impacts or disturbances to fauna.	Level 1
Blue warehou - EPBC Act: • Conservation dependent	• Known to occur. • No BIAs overlapped.	Vessel noise can change fish behaviour (e.g. induce avoidance, alter swimming speed and direction, and alter schooling behaviour) (Popper et al. 2014).	Minor local (small, variable, temporary behavioural changes within tens of metres of the continuous sound source) impacts or disturbances to fauna.	Level 1
Pipefish, pipehorse, seadragon and seahorse species - EPBC Act: • Marine.	• May occur. • No BIAs overlapped.	Vessel noise can change fish behaviour (e.g. induce avoidance, alter swimming speed and direction, and alter schooling behaviour) (Popper et al. 2014).	Minor local (small, variable, temporary behavioural changes within tens of metres of the continuous sound source) impacts or disturbances to fauna.	Level 1
Short-finned eels - • Not listed under the EPBC Act. • Culturally significant to First Nations people (Koster et al. 2021)	Seasonal presence in the Otway Basin and Bass Strait during spawning migration i.e. downstream migration of adult	A recent study of Anguillid eels demonstrated that acoustic stimuli induced behavioural avoidance (increased swimming, speed and movements away from the source)	Minor local (small, variable, temporary behavioural changes within tens of metres of the continuous sound source) impacts or disturbances to fauna.	Level 1

Fish (EPBC Act Listing)	Presence within Behavioural EMBA	Potential Behavioural Changes	Description of Potential Consequence	Inherent Consequence
	eels during late summer and autumn. Upstream migration of larvae and glass eels, where glass eels enter estuaries during mid-winter to late spring (VFA 2022b).	in some European eel and river lamprey under experimental conditions where swimming space was severely restricted (Deleau et al. 2019).		

Inherent Likelihood

The likelihood of behavioural changes to fish including eggs and larvae depends on the temporal overlap of the potential presence of fish with continuous sound sources in the operational area.

For a moderate chance of the risk event of behavioural changes to fish to occur, the following combination of factors are required:

- Drilling operations, and support vessel-based activities (vessel noise).
- Fish present within tens of metres of continuous sound source.

Table 6-39 provides details on the frequency of recorded sighting of EPBC-listed fish in the Otway Basin to infer presence within the behavioural EMBA, description of likelihood and the resulting inherent likelihood level for each fish species.

Table 6-39: Inherent Likelihood Levels - Continuous Sound - Behavioural Changes to Fish

Fish (EPBC Act Listing)	Presence within Behavioural EMBA	Description of Likelihood	Description of Potential Consequence
White shark - EPBC Act: • Vulnerable • Migratory.	• Known to occur. • No BIAs overlapped. • Seasonal presence in southern Australia during early summer.	The risk event could occur if a white shark is present within the behavioural EMBA during drilling and vessel activities. White sharks are known to occur within the behavioural EMBA; therefore, the risk event is considered to be possible.	Possible (C)
Eastern school shark - EPBC Act: • Critically endangered.	• May occur. • No BIAs overlapped.	A freak combination of factors would be required for a school shark to be present within the behavioural EMBA during drilling and vessel activities. Behavioural changes to school sharks are not expected to occur from Activity continuous underwater sound emissions.	Remote (E)
Shortfin mako **EPBC Act listed** • **Migratory**	• Likely to occur. • No BIAs overlapped.	A rare combination of factors would be required for a shortfin mako to be present within the behavioural EMBA during drilling and vessel	Unlikely (D)

Fish (EPBC Act Listing)	Presence within Behavioural EMBA	Description of Likelihood	Description of Potential Consequence
		activities. The risk event is considered possible but unlikely to occur during the Activity.	
Grey nurse shark - EPBC Act: • Migratory.	• Likely to occur. • No BIAs overlapped.	A rare combination of factors would be required for a grey nurse shark to be present within the behavioural EMBA during drilling and vessel activities. The risk event is considered possible but unlikely to occur during the Activity.	Unlikely (D)
Porbeagle / mackerel shark - EPBC Act: • Migratory.	• Likely to occur. • No BIAs overlapped.	A rare combination of factors would be required for a mackerel shark to be present within the behavioural EMBA during drilling and vessel activities. The risk event is considered possible but unlikely to occur during the Activity.	Unlikely (D)
Australian grayling - EPBC Act: • Vulnerable.	• Known to occur. • No BIAs overlapped.	A freak combination of factors would be required for an Australian grayling to be present within the behavioural EMBA during drilling and vessel activities. Behavioural changes to the Australian grayling are not expected to occur from the Activity continuous underwater sound emissions.	Remote (E)
Blue warehou - EPBC Act: • Critically endangered.	• Known to occur. • No BIAs overlapped.	The risk event could occur when additional factors are present, such that a blue warehou is present within the behavioural EMBA during drilling and vessel activities. Blue warehou are known to occur within the behavioural EMBA; therefore, the occurrence of a change in behaviour is possible but considered doubtful.	Possible (C)
Pipefish, pipehorse, seadragon and seahorse species - EPBC Act: • Marine.	• May occur. • No BIAs overlapped.	A freak combination of factors would be required for Syngnathidae to be present within the behavioural EMBA during activities generating continuous sound. Behavioural changes to Syngnathidae are not expected to occur from the Activity.	Remote (E)
Short-finned eels Not listed under the EPBC Act. Culturally significant to First Nations people (Koster et al. 2021)	Seasonal presence in the Otway Basin and Bass Strait during spawning migration i.e. downstream migration of adult eels during late summer and autumn. Upstream migration of larvae and glass eels, where glass eels enter estuaries during mid-winter to late spring (VFA 2022b).	The risk event could occur when additional factors are present, such that short-finned eels as adults during downstream spawning migration or as larvae / glass eels during upstream spawning migration is present within the behavioural EMBA during drilling and vessel activities. Short-finned eels are known to occur in the region and disperse widely in the ocean. Some individual eels may enter the behavioural EMBA; therefore, the occurrence of a change in behaviour is possible but considered doubtful.	Possible (C)

Inherent Risk Severity

The highest inherent risk severity of behavioural changes to fish including eggs and larvae from continuous sound emissions is **Low**.

Table 6-40 lists the inherent risk severity for each EPBC Act listed fish.

Table 6-40: Inherent Risk Severity – Continuous Sound - Behavioural Changes to Fish

Fish	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Severity
White shark	1	C	Low
Eastern school shark	1	E	Low
Grey nurse shark	1	D	Low
Porbeagle / mackerel shark	1	D	Low
Australian grayling	1	E	Low
Blue warehou	1	C	Low
Pipefish, pipehorse, seadragon and seahorse species	1	E	Low
Short-finned eels	1	C	Low

6.6.4.7 Risk: Auditory Impairment or Injury – Fish

Inherent Consequence Evaluation

Depending on the sound levels received, continuous sound emissions may cause auditory impairment or injury to fish including eggs and larvae from the onset of TTS and recoverable injury, respectively.

Underwater sound modelling predicted the continuous TTS and recoverable injury thresholds for fish including eggs and larvae was reached within distances listed in Table 6-41 (Popper et al., 2014; Connell and Koessler 2025).

TTS threshold for fish is based on SEL_{12h} which assumes a fish is consistently exposed to threshold levels for a 12-hour period. Recoverable injury thresholds for fish are based on SEL_{48h} which assumes a fish is consistently exposed to threshold levels for a 48-hour period. Distances predicted for the onset of TTS and recoverable injury thresholds listed in Table 6-41 suggest the Activity continuous underwater sound emissions have the potential to cause:

- Potential auditory impairment (TTS) to fish within 130 m
- Potential auditory recoverable injury to fish within 30 m.

A 130 m buffer around the operational area defines the impairment and injury EMBA for fish exposed to continuous sounds.

Table 6-41: Continuous Sound - Distance to TTS and Recoverable Injury Thresholds for Fish

Threshold Type	Threshold SPL (Lp; dB re 1 µPa)	Maximum distance (km)	Relevant scenario/s
TTS	158 for 12 hours	0.13	Scenario 5: MODU Drilling Operations with Standby OSV and resupply

Threshold Type	Threshold SPL (Lp; dB re 1 µPa)	Maximum distance (km)	Relevant scenario/s
Recoverable injury	170 for 48 hours	0.03	Scenario 5: MODU Drilling Operations with Standby OSV and resupply

It is not considered credible for fish to remain within 130 m and 30 m of continuous sound sources for 12 hours and 48 hours for the onset of TTS and recoverable injury, respectively. The impairment and injury EMBA of 130 m does not support habitats that encourage site fidelity for fish including eggs and larvae.

As described in Section 6.6.4.6, sharks are considered to be habituated to relatively high levels of continuous sound and fish are expected to avoid continuous sound sources in the operational area. Fish that avoid continuous sound sources in the operational area further prevents individuals from remaining within the range required for auditory impairment or injury to occur.

As such, auditory impairments or injuries to fish from Activity continuous sound emissions is not evaluated further.

Inherent Likelihood

Not applicable.

Inherent Risk Severity

Not applicable.

6.6.5 Control Measures, ALARP, and Acceptability Assessment

Table 6-42 provides a summary of the control measures and ALARP and acceptability assessment relevant to continuous sound emissions. A detailed assessment has been undertaken and, as part of Amplitude Energy's relevant persons engagement for previous projects and impacts, Amplitude Energy has sought advice from Australian Antarctic Division (AAD) on measures implemented or considered by the AAD for voyages into sensitive areas.

Table 6-43 provides an extended ALARP assessment.

Table 6-42: Underwater Sound Emissions – Continuous ALARP, Control Measures and Acceptability Assessment

Underwater Sound Emissions - Continuous	
ALARP Decision Context and Justification	**ALARP Decision Context: Type A** Impacts from continuous sound emissions are well understood, however, there will always be some uncertainty regarding the reaction of individual animals. Thus, the assessment of impacts and risks has been conservative including the selection of disturbance criteria, modelling assumptions, and evaluation of potential consequence and likelihood. Activities are well practised, and there are no conflicts with company values, no partner interests, and no significant media interests. Because the potential impacts to marine fauna of conservation value are evaluated as **Level 2**, Amplitude Energy believes ALARP Decision Context A should apply to marine fauna with the exception of pygmy blue whales and southern right whales. **ALARP Decision Context: Type B**

Underwater Sound Emissions - Continuous	
	ALARP decision context B has been applied in relation to pygmy blue whales and southern right whales because there is a residual (moderate) risk in relation to behavioural disturbance to these species within a BIA. The conservation management and national recovery plans for these species indicate that at certain times of year and for certain activities, additional mitigation actions and an adaptive management plan may be required to maintain a precautionary approach. Further controls to manage residual risks have been considered and several additional controls have been adopted. The adopted controls ensure the Activity environmental outcomes can be met and are not inconsistent with the objectives and relevant actions of species recovery plans.
Control Measure	**Source and Description of Control**
CM08: Planned Maintenance System	Power generation and propulsion systems on vessels and the MODU will be operated in accordance with manufacturer's instructions and ongoing maintenance to ensure efficient operation. *Risk event addressed: Change in fauna behaviour, auditory impairment or auditory injury from continuous sound.*
CM13: Offshore Operational Procedures	At a minimum, vessel operators shall adhere to the distances and vessel management practices of EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans describes strategies to ensure whales and dolphins are not harmed during offshore interactions with vessels and helicopters. Vessels adhere to the distances and vessel management practices of EPBC Regulations (Part 8) with increased caution zone of 500 m between whales and Activity vessels. *Risk event addressed: Change in fauna behaviour*
Additional Controls Adopted	**Source and Description of Control**
CM11: Titleholder Collaboration	Amplitude Energy will share sightings data including behavioural observations with other Titleholders in the Otway region and local research organisations to help inform each other's programs of work and respective risk reviews. This data can be used by appropriate parties for population and behavioural research and to inform management of impacts and risks from their own Activity activities.
CM15: Campaign Risk Review	Risk reviews are standard practice for offshore campaigns. The Amplitude Energy Environmental Protocol describes how environmental impact and risk management, including risk assessments, is undertaken for activities including offshore campaigns. As part of pre-campaign planning a risk review will be undertaken to re-assess campaign environmental impacts and risks to ensure ALARP and acceptability criteria are met. The assessment of environmental impacts and risks will focus on aspect: subsea noise, and risks to endangered whale species, specifically pygmy blue whales and southern right whales. The review framework is described in Section 12.10 and considers: • Model activity scenarios where additional details may have become available • Integrate into modelling the latest relevant sound exposure thresholds • Assess any new or updated information to determine if the rationale for previously discounted controls remains reasonable, or if additional measures are required to ensure that risks are continually reduced to levels that are ALARP and are of an acceptable level The review may be undertaken at different stages of the campaign planning, prior to a campaign activity commencing to assess any new or updated information to avoid or reduce overlap with endangered whales, where practicable, and to determine if

Underwater Sound Emissions - Continuous	
	additional controls are required to ensure that risks are continually reduced to levels that are ALARP and are of an acceptable level. *Risk event addressed: Change in fauna behaviour, auditory impairment or auditory injury from continuous sound.*
CM17: Offshore Victoria Whale Disturbance Risk Management Procedure	The impact and risk assessment has shown the potential for interaction between whales and the Activity, with some uncertainty around the likelihood of impacts. This uncertainty is addressed through the implementation of actions and adaptive management measures detailed in the Offshore Victoria Whale Disturbance Risk Management Procedure (Section 12.10). The Offshore Victoria Whale Disturbance Risk Management Procedure provides details on level of whale observation effort, triggers for actions and the actions to be taken to avoid injuring whales and avoid behavioural disturbance to endangered whale species (pygmy blue whales and southern right whales), reduce the risk of displacement of a foraging pygmy blue whale, and minimise the risk of disturbance to a southern right whale in a migration and/or reproduction area (EPO16). The Offshore Victoria Whale Disturbance Risk Management Procedure details requirements of the Activity which are addressed and summarised in Section 6.6.5 and Section 12.10. The requirements have been developed to account for the largest noise contours that may be produced throughout the duration of the activity. As such, the requirements are based on the distances predicted from the modelling of continuous noise emissions (see Section 6.6) and are therefore considered conservative and appropriate for activities which produce impulsive noise emissions. *Risk event addressed: Change in fauna behaviour, auditory impairment or auditory injury from continuous sound.*
Impact and Risk Summary	
Residual Impact Consequence	Change in ambient sound from continuous sound: **Level 1** – Minor local impacts or disturbances to flora/fauna, nil to negligible remedial / recovery works on land/water systems.
Residual Risk Consequence	**Level 2** – Localised short-term impacts to species or habitats of recognised conservation value not affecting local ecosystem function; remedial, recovery work to land, or water systems over days / weeks.
Likelihood	Due to the nature and scale of the proposed activities, and considering the proposed control, the likelihood of behavioural changes due to continuous underwater sound emissions is assessed as: • **Possible (C)** - Conceivable and could occur at some time. Could occur during the activity although a rare combination of factors would be required for the occurrence.
Residual Risk	Behavioural change, auditory impairment or auditory injury from continuous sound: **Moderate**.
Demonstration of Acceptability	
Principles of ESD	Underwater sound emissions are evaluated as having Level 2 consequence which is not considered as having the potential to result in serious or irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required.
Legislative and Conventions	Noise emissions will be managed in accordance with legislative requirements. Noise emissions will:

Underwater Sound Emissions - Continuous	
	• Not impact on the recovery of marine turtles as per the Recovery Plan for Marine Turtles in Australia (CoA 2017a). • Be managed such that any blue whale continues to utilise the area without injury and is not displaced from a foraging area in accordance with DAWE guidance on key terms (2021), where the action is needed to achieve the objective of the blue whale CMP (DoE 2015a). • Not impact the recovery of the blue whale as per the CMP for the Blue Whale (DoE 2015a). • Not prevent southern right whales utilising a migration BIA or HCTS, or cause auditory impairment (DCCEEW 2024b). • Be managed such that the risk of behavioural disturbance to southern right whales within BIA's and HCTS is minimised (DCCEEW 2024b). • Not impact the recovery of the southern right whale as per the National Recovery Plan for the southern Right Whale (DCCEEW 2024b). • Not impact the recovery of the white shark as per the Recovery Plan for the White Shark (DSEWPaC 2013a). Actions from the CMP for the Blue Whale (DoE 2015a) applicable to the activity in relation to assessing and addressing anthropogenic noise have been addressed as per: • Assessing the effect of anthropogenic noise on blue whale behaviour. Section 6.5.4 assesses the effects of anthropogenic noise from the activity on blue whale behaviour. • Be managed such that any blue whale continues to utilise the area without injury and is not displaced from a foraging area. Mitigation measures will be implemented to reduce the risk of displacement occurring during operations where modelling indicates that behavioural disturbance within a Foraging Area may occur (DAWE 2021). Actions from the National Recovery Plan for the southern right whale (Eubalaena australis) (DCCEEW 2024b) applicable to the activity in relation to assessing and addressing anthropogenic sound emissions have been addressed as per: • Assessing the effect of anthropogenic noise on southern right whale behaviour (Sections 6.5 and 6.6 assess the effects of anthropogenic noise from the activity on southern right whale behaviour). • Anthropogenic noise in BIAs and habitat critical to the survival of the Southern right whale will be managed such that any southern right whale continues to utilise the area without auditory impairment and is not displaced from these areas. • Sections 6.5 and 6.6 demonstrates that national policies (e.g. EPBC Regulations (Part 8) and Victorian (Marine Mammals) Regulations) were identified and included. • Sections 6.5 and 6.6 demonstrate that the activity can be conducted in a manner that is not inconsistent with the National Recovery Plan, the risk of behavioural disturbance is minimised to ALARP and ensures that the activity will not result in injury of southern right whale.
Internal Content	Relevant management system processes adopted to implement and manage hazards to ALARP include: • Risk Management (MS03) • Health Safety and Environment Management (MS09) • Supply Chain and Procurement Management (MS11)

Underwater Sound Emissions - Continuous	
	Activities will be undertaken in accordance with the Implementation Strategy (Section 11.0).
External Context	Activity will be undertaken in a manner consistent with relevant legislation, industry standards and guidelines, offshore practices and benchmarking. The activity is not predicted to result in impacts to species that would be inconsistent with recovery plans or conservation advice.
Other requirements	No objections or claims have been received during consultation regarding underwater sound emissions.
Demonstration of meeting the defined acceptable levels in the OPP	Section 8.2.6 of the **East Coast Supply Project OPP** demonstrates the acceptability of impacts and risks associated with underwater sound emissions – continuous. This acceptability demonstration is also valid and appropriate for the Activity (given this Activity is described and assessed in the OPP) and is supported by further evaluation against the acceptability factors as detailed below. Impacts and risks associated with the Activity are expected to be below the defined acceptable levels as described in the OPP by meeting the additional acceptability criteria described in Section 5.2.4.3, such **as** that for underwater sound emissions – impulsive: • OPP EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • OPP control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence, likelihood and residual risk are the same as those defined in the OPP. • No changes to internal or external context as defined in the OPP including no additional objections and claims were raised against this aspect.
Acceptability Outcome	**Acceptable** Amplitude Energy has determined that impacts and risks related to continuous sound emissions are acceptable, based on: • The planned management of impacts and risks integrates Amplitude Energy internal requirements, including relevant management system processes. • The activities will be managed in a way that is not inconsistent with the relevant principles of ESD. • The proposed controls and impact and risk levels are not inconsistent with national and international standards, laws, and policies including applicable plans for management and conservation advices, and significant impact guidelines for MNES*. • Relevant historical feedback from relevant persons (Australian Antarctic Division) for activities of similar nature and scale to the Project has been used to inform mitigation measures. • No other relevant feedback from stakeholders has been received that would inform the values and sensitivities /existing environment, impacts and risks, performance outcomes or mitigation measures. To manage impacts to receptors to acceptable levels, the following EPOs (equivalent to OPP EPOs as detailed in Appendix 1 -) have been applied: **EPO14**: Impacts to marine fauna from underwater anthropogenic noise emissions will be limited to temporary* behavioural change localised** to the noise source.

Underwater Sound Emissions - Continuous	
	Not exceeding the duration of the activity component (i.e. vessel campaign) (described in Section3.2).* ***Not exceeding the noise EMBA defined for the activity (described in Section 6.6.4).* **EPO15: No death or injury[8] to EPBC Act listed threatened, migratory or cetacean species. **EPO16**: Project related underwater noise within biologically important areas[8] and habitat critical to the survival of relevant species will be managed through the implementation of Cooper Energy Offshore Victoria Whale Disturbance Risk Management Process, such that: • Any blue whale continues to utilise biologically important areas without injury and is not displaced from a foraging area. • Southern right whales are not prevented from utilising biologically important areas[9] or habitat critical to the survival of a species or cause auditory impairment. • The risk of behavioural disturbance to southern right whales will be limited to temporary behavioural disturbance of individuals. **EPO17**: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable.

[8] *Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*

[9] *Biologically important behaviours such as reproduction, feeding, migration and resting (DCCEEW, 2023).*

Table 6-43: Underwater Sound Emissions – Continuous - extended ALARP Assessment

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
Eliminate Activity	PTS, TTS and behavioural disturbance of whales from vessel noise. Rated as Level 2 consequence and Low risk in relation to these project activities.	By not undertaking the activity, sound sources would be eliminated.	N/A	N/A	N/A	Reject. Rationale: Given that DAWE assesses the potential impacts of shipping and industrial noise as 'minor' i.e., 'individuals are affected but no affect at population level' the potential environmental benefits of not undertaking the activity in relation to noise generation are also considered minor. Amplitude Energy does not consider this control as feasible.
Eliminate use of DP vessels during defined periods when blue whales are more likely to occur.	As above.	By avoiding periods when blue whales are more likely to occur, impacts to species of conservation significance during times when they may be in the region and undertaking biologically important behaviours can be eliminated (for the species of concern).	This type of control is not typical of entire BIAs such as blue whale foraging areas, which encompass the entire south east coastline. No offshore industry in the region limits vessel activity to being outside either pygmy blue whale or southern right whale season within the broader species BIAs. It would be impossible for multiple existing marine industries to operate in offshore south east Australia if avoidance of the blue whale foraging season was adopted as a control measure.	Eliminating the use of DP vessels during blue whale seasons would preclude the activity entirely because of the many variables that will influence the activity schedule. Limits schedule flexibility so as to make it impossible to operate.	This has the same or near same effect as eliminating the activity. With a MODU being brought into the region to complete multiple well campaigns for multiple operators, there is very limited scope to influence the activity schedules without it translating in practice to forfeit of the one or more of the contracted activities; this is effectively the same as 'eliminate the activity' which has been ruled out above. Due to the scale of effort and investment associated with the activity, the risk introduced of having to delay the activity due to blue whale season is not considered tolerable. Such a restriction would make operating impracticable and would not be compatible with the safe and efficient operation of the Activity.	Reject. Rationale: Option not feasible. In this region, blue whales may occur over much of the summer months and into autumn. High-cost risk in the case of delays whereby the well had to be deferred.
Eliminate use of DP vessels during defined periods when southern right whales are more likely to occur.	As above.	By avoiding periods southern right whales are more likely to occur, impacts to species of conservation significance during times when they may be in the region and undertaking biologically important behaviours can be eliminated (for the species of concern).	There are examples of this type of control being applied in well defined, discrete areas, for example, the exclusion of vessels from Logans Beach, Warrnambool (June-Oct) which is an established nursery for southern right whales in the south east, away from major ports and existing built environment. This type of control is not typical of entire BIAs such as or southern right whale BIAs or HCTS, which encompass the entire south east coastline including major Ports. No offshore industry in the region limits vessel activity to being outside southern right whale season within the broader species BIAs. It would be impossible for multiple existing marine industries to operate in offshore south east Australia if avoidance of either blue whale or southern right whale seasons were adopted as a control measure.	Eliminating the use of DP vessels during southern right whale seasons would preclude the activity entirely because of the many variables that will influence the activity schedule. Limits schedule flexibility to make it impossible to operate.	This has the same or near same effect as eliminating the activity. With a MODU being brought into the region to complete multiple well campaigns for multiple operators, there is very limited scope to influence the activity schedules without it translating in practice to forfeit of the one or more of the contracted activities; this is effectively the same as 'eliminate the activity' which has been ruled out above. This introduces significant risks, whereby a commitment to avoid doing well construction activities and the necessary sub-activities (MODU mooring) during southern right whale season would result in a high chance the activity would not take place due to potential schedule delays (weather, operations). Due to the scale of	Reject. Rationale: Option not feasible. In this region, southern right whales occur over winter. Would in practice carry a high risk of failing, and high-cost risk in the case of delays whereby the well had to be deferred.

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
					effort and investment associated with the activity, the risk introduced of having to delay the activity due to southern right whale season is not considered tolerable. Such a restriction would make operating impracticable and would not be compatible with the safe and efficient operation of the Activity.	
Anchoring of vessels to hold position rather than use DP	As above.	By anchoring vessels, sound emissions related to vessel DP would be reduced.	This is not feasible as the support vessels are required to move during the activities (i.e., not operate from a static position). Vessels need to be able to maintain position to within a small margin of error, close to offshore facilities and other vessels (in the case of MODU support vessels); anchoring would not allow for this.	Not considered feasible.	N/A	Reject. Rationale: Option not feasible. Vessels need to be able to hold position and maintain a consistent pace and anchoring would restrict this. Would increase seabed disturbance.
Limit power to thrusters of DP vessels and MODU to reduce underwater sound contours	As above.	Limiting thruster power could reduce impacts from subsea underwater sound. Limiting thruster power is possible where activities can be first made safe. This action would not be immediate but should reduce the risk of displacement if whales are foraging or transiting in the vicinity.	Not typically applied to vessels as thruster power is determined by safety limits and operational requirements. Thruster levels are optimised to operating modes and conditions but can be reduced if safe to do so.	Considered feasible if safe to reduce thruster power.	N/A	Implement. Rationale: Thruster power can be reduced if safe to do so. Integrated into CM17: Offshore Victoria Whale Disturbance Risk Management Procedure.
DP vessel underwater sound reduction in design (DNV Silent notation)	As above.	Vessel design can reduce underwater sound.	Relevant persons feedback: Australian Antarctic Division (AAD) advised their new state of the art survey/ice breaker vessel Nuyina which will operate in the Antarctic has been designed to reduce underwater sound and vibration. The vessel has been assigned DNV Silent R notation equivalence at 8 kn electric propulsion for science acoustic work. Currently not typical for industry. A review of industry vessels operating inside and outside of Australian waters has not identified any vessels assigned the DNV Silent notation.	Given the current absence of industry vessels with silent notation, this measure is not considered to be feasible for the project.	N/A	Reject. Rationale: Option not feasible.
Implement safe shut-down points	As above.	Shutting down vessel DP or MODU could reduce impacts from subsea underwater sound. Shutting down vessel DP is possible where activities can be first made safe. This action would not be immediate but should reduce the risk of displacement if whales are foraging (PBW) or transiting (SRW) in the vicinity.	Not typically applied to DP vessels or MODUs. Typically applied to activities that generate impulsive underwater sound such as piling and seismic survey.	Cost associated with shutting down DP, requiring suspension of Cargo or mooring Ops. Potential cost >$4M.	Retrieval of subsea equipment (e.g. ROV) required prior to DP shutdown. Increased frequency of handling through the splash zone and on deck increases personnel H/S risk exposure. This is considered manageable through existing systems for control of work. Good reliability at project operational level.	Implement. Rationale: reduces risk of displacement of whales. Costs are not grossly disproportionate to the risk reduction achieved in relation to temporary operational subsea noise. Integrated into CM17: Offshore Victoria Whale Disturbance Risk Management Procedure.
Deploy bubble curtains around MODU and / or vessels.	As above.	Increased confidence no foraging blue whales or southern right whales in the vicinity which could be injured or displaced.	Bubble curtains were raised as an idea during project ALARP workshops and also by the AAD during consultation. No known examples of bubble curtains being used as mitigation for DP vessels.	Not considered feasible	Discussions with technology providers indicates the deployment of bubble curtains offshore in environments like the Otway presents a number of challenges, including:	Reject. Option not feasible.

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
					Providing oil-free air to the seabed would require a large quantity of large diesel-run air compressors. At least one additional dedicated DP support vessel would likely be required for these compressors. Currents – Bubble curtains are drastically impacted by currents. Current speeds and directional shifts with wind and tide, which in the dynamic environment of the Otway would result in bubble curtains being distorted and ineffective by the time bubbles rise from the seabed to surface. Alternate options such as the deployment of hoses on close to thruster locations or offset on buoys present SIMOPS and safety risks including congestion of the vessel and MODU safety zone and potential interference with/from thrusters and moorings. As a result, the use of bubble curtains is not considered effective, feasible or practicable.	
Opportunistic monitoring from project vessel crew and helicopter crew. Crew observers are inducted into Monitoring and Communications Protocols including requirement to report all sightings to vessel master. Trained crew to continue observations during MMO rest breaks.	As above.	Increased confidence no foraging blue whales or southern right whales in the vicinity which could be injured or displaced.	Yes. Opportunistic monitoring is typically integrated into offshore industry operations including from vessels and helicopters (where used for crew changes). Crew are typically engaged to support MMO and are experienced in keeping watch offshore.	Costs associated with inducting crew accounted for in planning.	No introduced risks. Good reliability at the project operational level.	Implement. Rationale: supports reducing risk of displacement. Costs are not grossly disproportionate to the risk reduction achieved in relation to temporary operational subsea underwater sound emissions. Integrated into CM17: Offshore Victoria Whale Disturbance Risk Management Procedure.
A dedicated MMO on each vessel and MODU used throughout the activity.	As above.	Increased confidence of no southern right whales or foraging blue whales in the vicinity which could be injured or displaced. Higher confidence in identifying whales and whale behaviour compared to opportunistic monitoring alone.	Yes. This has been applied to vessels in this region (known foraging blue whale BIA and southern right whale migration BIA) where important behaviours are known to occur. Feedback from Beach Energy undertaking drilling in the Otway Basin was that MMOs on the MODU were not effective due to the MODU having restricted viewing platforms. Dedicated MMOs on each support vessel was seen as more effective. This is also Amplitude Energy's experience during offshore decommissioning	Additional cost of MMO mob/demob and time offshore accounted for in planning.	No introduced risks. Good reliability at the project operational level.	Implement for vessels only. Rationale: supports reducing risk of displacement. Costs are not grossly disproportionate to the risk reduction achieved in relation to temporary operational subsea underwater sound emissions. Integrated into CM17: Offshore Victoria Whale Disturbance Risk Management Procedure.

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
			activities in the Gippsland offshore Basin in 2023 and 2024. In addition, having a dedicated MMO on each vessel means that pre-activity start, and ongoing observations can be conducted within the full Activity Action Zone (see CM17: Amplitude Energy Offshore Whale Disturbance Risk Management Procedure) for activities where observations are limited. Having a dedicated MMO on each vessel is more effective than having an additional dedicated MMO on the same vessel. AAD advised in relation to rock blasting activities (wharf construction) in the Antarctic, dedicated MMOs were used.			
Additional dedicated MMO when daylight hours extend beyond 12-hours a day.	As above.	Increased confidence no southern right whales or foraging blue whales in the vicinity which could be displaced. Higher confidence in identifying whales and whale behaviour compared to opportunistic monitoring alone. Risks would remain Low.	This has been applied to vessels in this region where important behaviours are known to occur to manage fatigue issues for long duration activities during periods daylight hours are >12 hour. Crew member (e.g. Officer of the Watch) will receive training from the MMO in whale observation and distance estimation to assist the MMO during daylight hours.	Additional cost of MMO mob/demob and time offshore not accounted for in planning. Potential for limited bed space on vessels. Time to train vessel crew in whale ID and distance estimation.	Marginal bed space on smaller vessel may drive the selection of a larger (and potentially noisier) vessel. MMOs have good reliability at the project operational level. Crew / Officers of the Watch are experienced in working and watch keeping at sea.	Implement for vessels Rationale: supports reducing risk of displacement. Costs are not grossly disproportionate to the risk reduction achieved in relation to temporary operational subsea underwater sound emissions. Integrated into CM17: Offshore Victoria Whale Disturbance Risk Management Procedure.
Vessel onboarding process includes consideration of relative nature/scale of potential subsea noise impacts	As above.	Provides opportunity to influence reduction in subsea noise associated with the activity.	There are examples of vessels being designed to minimise noise (e.g., Australian Antarctic Research vessel) but typically vessels are selected based on capability for the work scope.	Cost associated with time for vessel evaluations.	No introduced risks.	Implement Rationale: supports reducing risk of displacement. Costs are not considered to be grossly disproportionate to the risk reduction achieved in relation to temporary operational subsea underwater sound emissions. Integrated into CM15: Campaign Risk Review.
Limiting resupply and other DP vessel operations such as mooring deployment or retrieval to daylight hours to enable visual detection of whales	As above.	Increased confidence no foraging blue whales or southern right whales in the vicinity which could be injured or displaced. Risks would remain Low.	This has not been applied to vessels in this region (known foraging blue whale area and southern right whale migration BIA) where important behaviours are known to occur. MODU resupply may take up to 8 hrs and mooring deployment 2-3 days. Thus, limiting these activities to daylight hours is not feasible and additional controls such as pre-start surveys and adaptive management for night operations, as detailed in CM17: Amplitude Energy Whale Management Procedure, will ensure risk are managed to the acceptable level.	MODU resupply may take up to 8 hrs (every 2-3 days), mooring deployment (5-7 days), mooring retrieval (14-20 days). Thus, limiting these activities to daylight hours would result in significant additional costs with limited increased benefit with the additional controls implemented as per CM17: Amplitude Energy Whale Management Procedure.	Additional risks having vessels on standby waiting for daylight hours to undertake activity.	Reject Rationale: significant costs with limited increased benefit
Drone surveillance from vessel	As above.	May provide slight increase in visibility beyond nominal MMO viewing platform height for the	Not for this activity type. Some examples of drone use nearshore and offshore particularly for scientific study,	Additional cost of drone hire/purchase and pilot for the	Dropped object risks. Risks of loss of equipment. Not considered reliable at the operational level for this activity.	Reject Rationale: The measure is not typical practice for this type of

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
		duration of drone flight. This could provide slight increased confidence no foraging blue whales in the vicinity which could be injured or displaced. Risks would remain Low.	though weather sensitive, and not for sustained periods.	duration of the campaign estimated circa $60K.		activity and does not result in a discernible reduction in risk, whilst adding cost and additional operational HSEC risks. The costs/risks are grossly disproportionate to the risk reduction achieved in relation to temporary operational subsea underwater sound emissions.
Monitor oceanographic precursors (early warning system)	As above.	There are oceanographic and biological precursors such as SST, eddies and primary production which may provide an indication of increased secondary production (including krill), which may then be conducive to successful foraging (e.g. Murphy et al. 2017). The benefit of this early warning system is dependent on reliability of these precursors as indicators of blue whale foraging; currently, reliability is likely to be low, which could lead to many false positives. Risks would remain Low.	Not typically applied in offshore industries. Primary productivity measurements are not an accurate pre-cursor to feeding activity. There can be a significant lag between peaks in Chl-A levels and peaks in krill presence. Other factors determine presence of foraging marine mammals aside from prey levels.	Administrative costs of monitoring and interpreting environmental precursors estimated circa $50K.	Reliability is likely to be low, which could lead to many false positives with significant cost and schedule impact to the project.	Reject Rationale: The measure is not typical practice for this type of activity and does not result in a discernible reduction in risk. The option adds cost and there is limited confidence in operational reliability for this application. The costs are grossly disproportionate to the risk reduction achieved in relation to temporary operational subsea underwater sound emissions.
Satellite imagery	As above.	Satellite imagery can be used to gather oceanographic and biological information to support the understanding of presence of marine mammals in the area. Risks would remain Low.	Not typically applied in offshore industries. Sourcing and interrogating satellite imagery is possible, however at the operational level is not considered reliable.	Administrative costs of monitoring and interpreting satellite images.	Reliability is likely to be low with limited additional benefit relative to accepted controls.	Reject Rationale: The measure is not typical practice for this type of activity and does not result in a discernible reduction in risk. The option adds cost and there is limited confidence in operational reliability for this application. The costs are grossly disproportionate to the risk reduction achieved in relation to temporary operational subsea underwater sound emissions.
Infra-red systems	As above.	Infra-red (IR) systems could enhance the ability of MMOs to visually detect the presence of foraging whales. Risks would remain Low.	Infra-red systems are not available as a real-time monitoring tool for operations and have the following limitations: Poor performance of the system in sea states greater than Beaufort Sea State 4 (due to the inability to adequately stabilise the camera) (Verfuss et al. 2018). Conditions such as fog, drizzle, rain limit detections to be made using IR (Verfuss et al. 2018). Detection range for large baleen whales is 1 to 3 km.	Additional cost of IR tech hire/purchase and operators for the duration of the campaign estimated circa $100K.	Reliability is likely to be low with limited additional benefit relative to accepted controls.	Reject Rationale: The measure is not typical practice for this type of activity and does not result in a discernible reduction in risk. The option adds cost and there is limited confidence in operational reliability for this application. The costs are grossly disproportionate to the risk reduction achieved in relation to temporary operational

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
						subsea underwater sound emissions.
Passive Acoustic Monitoring (PAM)	As above.	PAM can be used to detect marine mammal calls, and support sightings made by MMO. Feedback from AAD indicated PAM was utilised during rock blasting activities in the Antarctic to verify subsea noise levels; if noise levels were higher than anticipated then explosive charges could be reduced.	Not typical for offshore vessel activities. Likely to be some interference from vessel noise at close range.	Additional cost of PAM tech hire / purchase and operators for the duration of the campaign estimated circa $100K.	Reliability considered lower than direct observations, with limited additional benefit relative to accepted controls.	Reject. Rationale: The measure is not typical practice for this type of activity and does not result in a discernible reduction in risk. The option adds cost and there is limited confidence in operational reliability for this application. The costs are grossly disproportionate to the risk reduction achieved in relation to temporary operational subsea underwater sound emissions.
Campaign risk review in advance of campaign to ensure control measures continue to reduce impacts and risks to ALARP	As above.	Increased confidence the rationale for control measure selection and rejection are still valid, and that impacts and risks remain ALARP.	Yes – reflects intent of Amplitude Energy Risk Management (including change management) Processes. Including a minimum timeframe in advance of the campaign allows for further information (e.g. recent baseline information) to be considered in the risk review.	Cost of risk review accounted for as part of project planning.	None.	Implement. The Pre-Activity Risk Review Process includes provision for completing the risk review prior to the campaign commencing. Note – the timing of different risk review elements may differ, for example re-modelling (if required, may be long lead), whereas reconsideration of some control measures and additional would typically be reconsidered as part of the activity HAZID which may be completed ~1-6 months prior to mobilisation depending on the complexity of the project. Integrated into CM15: Campaign Risk Review.
Extend the Marine Mammal Observer and Activity modification provisions beyond peak foraging/migration seasons, to include shoulder season.	As above.	Increased confidence in no southern right whales or foraging blue whales in the vicinity which could be disturbed by noise from the activity.	Not typical for offshore vessel activities. Maritime Vessels typically rely on Vessel Crew to observe for whales. Crew / Officers of the Watch are experienced in working and watch keeping at sea (AMSA, 2023).	Additional costs associated with mobilising MMO and/ or inducting Crew to implement the risk management provisions.	Marginal bed space on smaller vessel may drive the selection of a larger (and potentially noisier) vessel. MMOs have good reliability at the project operational level.	Implement. The Offshore Victoria Whale Disturbance Risk Management Procedure (CM17) will monitor DP Observation Zones (and apply response actions) throughout the entire activity.
Collaboration with nearby titleholders to identify activity overlap and align approaches with whale disturbance risk management.	As above	Consistent implementation of control measures. Increased opportunities to improve outcomes across the Otway Basin activities.	Yes – considered good practice to share relevant learnings.	Cost of time to facilitate and partake in meetings / communications and implement associated actions.	None	Implement. Amplitude Energy participates in relevant communications with other Titleholders in the Otway, providing opportunity to discuss

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
						cumulative impacts and their management. Integrated into CM11: Titleholder Collaboration and CM18: Other Detection Technologies.

6.7 Introduction, Establishment and Spread of IMS

6.7.1 Cause of Aspect

Invasive marine species (IMS) include marine plants or animals that have been introduced into a region beyond their natural range. IMS can survive, reproduce and establish founder populations which may predate on or outcompete native species. Species of concern are those that are not native and are able to spread by human mediated or natural means. The activities that may cause an unplanned introduction of IMS due to the Activity are identified in Table 6-44 and described in further detail in subsections below.

Table 6-44: Activities that may result in the Introduction of IMS

Aspect / Phase	Activity component
Support activities (vessel based)	MODU operations
	Vessel operations
	ROV operations

The survival and invasive capabilities of IMS once introduced depend on certain environmental factors, such as water temperature, depth, salinity, nutrient levels, habitat type and competition. Successful IMS invasion requires the following circumstances:

- Colonisation and establishment of the IMS on a vector (e.g. vessel hull) in a donor region (e.g. home port).
- Survival of the IMS on the vector during the voyage from the donor to the recipient region (e.g. operational area).
- Colonisation (e.g. dislodgement or reproduction) of the IMS in the recipient region, followed by successful establishment of a viable new local population.

Various natural and anthropogenic events establish pathways for IMS translocation and introduction around Australia. In relation to the Activity facilities and activities, the introduction, establishment and spread of IMS could occur through several different pathways and risk events, as described in Table 6-45.

Table 6-45: Pathways for the Introduction, Establishment and Spread of IMS

Pathway to Introduction	Means of Establishment	Mechanisms of Spreading
IMS is transferred into the field, becomes established and spreads.		
IMS within biofouling on MODU or vessels dislodged to the seabed. IMS within biofouling on equipment that is routinely submerged in water, and which is dislodged to the seabed.	Suitable habitat and conditions available for IMS in field.	Once established may spread by itself if conditions are suitable. In field equipment may provide connectivity allowing spread across infrastructure. Other anthropogenic influence (e.g. fishing) could spread established IMS within and outside of the field.
IMS is transferred between vessels, establishes on vessels and is spread to other areas (e.g. ports).		

Pathway to Introduction	Means of Establishment	Mechanisms of Spreading
Discharge of ballast water containing IMS. Cross contamination of IMS between vessels and the MODU.	Suitable habitat and conditions available for IMS on vessels and within ballast and seawater systems.	IMS spreads between ports and other facilities via vessels acting as a vector.
IMS is transferred out of the field, becomes established at locations inside or outside the region and spreads.		
Already established populations of IMS within the offshore field via natural or anthropogenic influences are recovered with equipment and dislodged whilst being transferred to shore.	Suitable habitat and conditions available for IMS at shoreside facilities.	Once established may spread by itself if conditions are suitable. May become established on structures at ports, and from there spread to vessels which then become a vector for the spread of IMS.

6.7.2 Aspect Characterisation

6.7.2.1 IMS Already Established in the Region

A variety of IMS have become established within ports around Australia. Even within the same region, different ports may host a mix of established IMS (Australian Government, 2019). Ports are often suitable for establishment of IMS because they are regularly exposed to IMS from many different vessels that may lay-up for long periods of time. Ports also typically have shallow areas and hard structures which provide suitable substrate for establishment. IMS can be translocated from a port in either vessel ballast or as biofouling, as described in the sections below.

Table 6-46 details the marine pests of greatest concern for the relevant domestic locations for the Activity, compared with the IMS potentially occurring in Australian waters. Whilst the number of IMS potentially occurring within Australian waters is extensive, the list below is compiled from the known IMS listings on the Australian Government Marine Pest website (Australian Government, 2025), IMS of most concern on the Victorian Parks website (Parks Victoria 2025) and advice from State Government Biosecurity dept.

Table 6-46: High-Risk Marine Species of Concern to Australia (Australian Government, 2019; Parks Victoria, 2025)

Scientific Name	Common Name	Key Ports in the Region (✓ = confirmed IMS; w = keep watch for) (Australian Government, 2025)	
		Portland (Otway)	Melbourne / Geelong (Port Phillip Bay)
Invasive Marine Species (not known to be established in Australia)			
Balanus improvises	Barnacle	-	-
Caprella mutica	Japanese skeleton shrimp	-	-
Caulerpa taxifolia (exotic strains only)	Green macroalga	-	-
Charybdis japonica	Lady crab, Asian paddle crab	-	-

Scientific Name	Common Name	Key Ports in the Region (✓ = confirmed IMS; w = keep watch for) (Australian Government, 2025)	
		Portland (Otway)	Melbourne / Geelong (Port Phillip Bay)
Corbula (Potamocorbula) amurensis	Asian clam, brackish-water corbula	w	w
*Crassostrea gigas**	Pacific Oyster	-	-
Crepidula fornicate	American slipper limpet	w	w
Didemnum perlucidum	White colonial sea squirt	-	-
Ensis directus	Jack-knife clam	-	-
Eriocheir sinensis	Chinese mitten crab	w	w
Hemigrapsus takanoi/penicillatus	Brush-clawed shore crab	-	-
Marenzelleria spp. (invasive species, marine/estuarine incursions)	Red gilled mudworm	-	-
Mnemiopsis leidyi	Comb jelly	-	-
Mya arenaria and japonica	Soft shell clam	w	w
Mytella strigata	Charru mussel	w	w
Mytilopsis sallei	Black striped false mussel	w	w
Neogobius melanostomus (marine/estuarine incursions)	Round goby	-	-
Perna canaliculus	New Zealand green-lipped mussel	-	-
Perna perna	Brown mussel	-	-
Perna viridis	Asian green mussel	w	w
Rapana venosa (syn. Rapana thomasiana)	Rapa whelk	w	w
Rhithropanopeus harisii	Harris' mud crab	-	-
Sargassum muticum	Asian seaweed	-	-
Siganus rivulatus	Marbled spinefoot, rabbit fish	-	-
Spartina anglica and Spartina x townsendii sp	Cord Grass	-	-
Urosalpinx cinerea	Atlantic oyster drill	-	-
Established in Australia			
*Asterias amurensis**	Northern Pacific sea star	-	✓

Scientific Name	Common Name	Key Ports in the Region (✓ = confirmed IMS; w = keep watch for) (Australian Government, 2025)	
		Portland (Otway)	Melbourne / Geelong (Port Phillip Bay)
Arcuatula senhousia	Asian bag mussel, Asian date mussel	✓	✓
*Carcinus maenas**	European green crab	-	✓
Codium fragile spp. Tomentosodies	Green macroalga	-	-
Didemnum vexillum	Carpet sea squirt	-	-
Grateloupia turuturu	Red macroalga	-	-
Hemigrapsus sanguineus	Asian shore crab	w	✓
*Maoricolpus roseus**	New Zealand screwshell	-	-
*Sabella spallanzanii**	European fan worm	✓	✓
*Undaria pinnatifida**	Wakame	-	✓
Varicorbula gibba	European clam	-	-
Caulerpa taxifolia	Aquarium caulerpa	-	-
Holoplankton high-risk species			
Alexandrium monilatum, Dinophysis norvegica and *Pfiesteria piscicda*	Toxic dinoflagellate species	-	-
Chaetoceros concavicornis and *Chaetoceros convolutes*	Centric diatom species	-	-
Pseudo-nitzschia seriata	Pennate diatom	-	-
* Most concerning IMS in Victoria (Parks Victoria, 2025).			

6.7.2.2 IMS Associated with MODU, Vessels and Activity Equipment

Ballast Water

Ballast water maintains stability of ships at sea to provide safe operating conditions. Water is pumped into the ballast tanks of ships from the surrounding environment and is subsequently released when the ships weight needs to be lightened. This transfer of water, which may contain bacteria, microbes, small invertebrates, eggs, cysts and larvae may result in the introduction and spread of IMS, if these species can survive and establish (IMO 2025a).

Vessels are required to manage ballast water to minimise the risk of IMS introduction and spread, in accordance with the International Maritime Organisation (IMO) Ballast Water Convention (IMO 2017), the Australian Ballast Water Management Requirements (DAWE 2020a) and the Biosecurity Act 2015. The obligations of vessels operating in Australian waters includes the development of a valid ballast water management plan and the use of approved ballast water management systems.

Since the Commonwealth Department of Agriculture, Fisheries and Forestry (DAFF) (and predecessors) introduction of mandatory ballast water regulations, where ballast water must be exchanged outside territorial sea (12 nm off the Australian coast, including islands), risk of IMS from international shipping has been greatly reduced.

Biofouling

Biofouling occurs through the accumulation of microorganisms, plants, algae or other organisms on submerged structures, including the underwater surfaces of ships (e.g. propellers, anchors and hulls) (IMO, 2025b). Installed infrastructure may also provide marine organisms, including IMS, with a substrate to attach to.

Biofouling is one of the main vectors for the introduction and spread of IMS and Department of Agriculture and Water Resources (DAWR) (2018) suggest that biofouling has been responsible for more IMS introductions than ballast water. DAFF provide guidelines for the management of IMS from biofouling (DAFF 2009) and have now also specified requirements for vessels of international origin to manage biofouling risk (DAFF 2023).

The MODU, vessels and equipment may be sourced internationally and domestically. Vessels will transit between the MODU and domestic ports. IMS on the MODU or vessels can be dislodged to the seabed and establish if conditions and habitats are suitable. Anthropogenic influences (e.g., vessel transit, fishing) could spread IMS within and outside of the field. There will be periods where the MODU and vessels work in close proximity, where there may be potential for IMS to translocate from equipment, or from one vessel to another if vessels are not managed appropriately, for example, through ballast exchange or dislodged biofouling.

6.7.3 Predicted Environmental Impacts and Risks

The potential impacts and risk events associated with IMS introduction (assuming their survival, colonisation and spread) could result in a change in ecosystem dynamics which may include:

- change in ecosystem dynamics.
- change to the functions, interests, or activities of other marine users.

The introduction of IMS could occur within the operational area. Receptors which may be directly affected include marine invertebrates and benthic habitats. Indirect effects are possible to commercial fisheries, conservation values of protected areas and First Nations cultural values and sensitivities. Impacts and risks to First Nations cultural heritage are assessed in Chapter 8.0.

6.7.4 Impact and Risk Evaluation

6.7.4.1 Risk: Change in Ecosystem Dynamics

Inherent Consequence Evaluation

Due to the complexity of ecosystems, there is a high degree of uncertainty in predicting how an introduced species may interact with a new environment. The level of invasiveness and ultimate impact of the species will be dependent on the conditions of the new environment being favourable for that species. Not all introduced species will survive and establish in a new environment.

The benthic habitats at the operational area are characterised by hard substrate and reef with patches of sand / rubble, typical of the broader Otway region. Therefore, areas of rocky substrate do

exist which may provide habitat for diverse assemblages of species. Any IMS introduced into the operational area have the potential to become established on the seabed, impacting the benthic habitats and species present.

If IMS survive and establish, they may change ecosystem dynamics by altering predator-prey interactions, out-competing native species for resources, segregating habitat, spreading viruses or toxic chemicals, altering water quality, and disturbing, injuring or killing vital ecosystem organisms (ecosystem engineers and keystone species). Higher trophic levels may also be impacted by the introduction of IMS. Marine mammals and birds foraging offshore can be indirectly affected by any changes in prey associated with IMS, possibly reducing food availability.

If IMS were transferred between the MODU and support vessels within the operational area, spread of IMS is possible to areas beyond the operational area. Ports and other offshore industry could potentially be exposed through both ballast and biofouling, impacting benthic habitats, marine fauna and coastal and offshore socio-economic receptors beyond the operational area.

IMS may be difficult and costly to eradicate from areas once established (Hewitt et al. 2002). If the introduction is captured early, eradication may be effective but is likely to be expensive, disruptive and, depending on the method of eradication, harmful to other local marine life.

IMS introduction and establishment is evaluated to have a consequence **Level 4**, based on:

- Species in the operational area of conservation value.
- Ability of introduced IMS to impact areas beyond the operational area.
- Difficulty to eradicate IMS once established and potential long-term effects.

6.7.4.2 Risk: Change to the Functions, Interests, or Activities of Other Users

Inherent Consequence Evaluation

IMS may also impact socio economic receptors through a reduction in ecological values. Primary impacts include direct damage to vessels, equipment and infrastructure, leading to a reduction in efficiency, productivity and profit. IMS can deplete fishing grounds and aquaculture stock, with between 10% and 40% of Australia's fishing industry being potentially vulnerable to marine pest incursion.

For example, the introduction of the Northern Pacific Sea star in Victorian and Tasmanian waters was linked to a decline in scallop fisheries (Dommisse and Hough 2004). As described in Section 4.4.3, 13 managed fisheries (6 Commonwealth and 7 State managed) were identified within the operational area, of which 6 have recorded fishing efforts. Furthermore, tourism operators may utilise the operational area for a number of activities such as fishing charters which commonly target bluefin tuna, gummy, school and mako sharks and reef species such as snapper.

As above, IMS introduction and establishment is evaluated to have a consequence **Level 4**, based on:

- Species in the operational area of conservation value.
- Ability of introduced IMS to impact areas beyond the operational area.
- Difficulty to eradicate IMS once established and potential long-term effects.

Inherent Likelihood

Highly disturbed nearshore environments (such as marinas) are more susceptible to IMS establishment than open-water environments (Paulay et al. 2002). Successful IMS establishment is dependent upon suitable substrate and habitat availability, such as rocky and hard benthic habitat or subsea infrastructure. The probability of successful IMS establishment and spread decreases in well-mixed, deep ocean waters away from coastal habitats (Geiling 2014). Although the operational area is expected to have some hard benthic habitat, it is in an open-water environment with water depths greater than 50 m and thus is not expected to be conducive to the translocation and survival of IMS from vessels or the MODU to the seabed.

Any IMS introduced to the operational area would be expected to remain fragmented and isolated, and only within the vicinity of the infrastructure (i.e. it would not be able to propagate to nearshore environments).

In summary, the chances of successful colonisation inside the operational area are considered small given:

- The operational area occurs outside of coastal waters where the risk of IMS establishment is considered greatest (BRS 2007).
- The Australian Government Bureau of Resource Sciences (BRS) established that the relative risk of IMS incursion decreases with distance from the coast. The modelling estimates: 33% chance of establishment at 3 nm, 8% chance at 12 nm and 2% chance at 24 nm based on a 50 m depth contour. The operational area is in approximately 56 m water depth and is located offshore.
- Practices for minimising the risk of IMS spread are well established within the marine industry and there are clear requirements set by the DAFF.
- Amplitude have established communications with Victorian Government Biosecurity specialists who provide advice on species of interest and requirements as they evolve.
- The operational area will not have any long-term platforms, FPSO or moored vessels, with the MODU and vessels being in the operational area temporarily; as vessels and MODUs will be moving relatively frequently, the risk of attachment of IMS and colonisation of the facilities is reduced compared to a permanent or semi-permanent vessel presence.
- There have been no IMS introductions from Amplitudes previous activities or other activities in the vicinity.
- The likelihood of IMS becoming established within the operational area as a result of the activities is therefore considered **Remote (E)**.

The spread of IMS from the operational to areas elsewhere via translocation of IMS between vessels is also considered here. Several factors reduce the chance of IMS translocating between vessels:

- Support vessels will come alongside the MODU where required; time alongside is relatively short and managed via DP; there is typically no or minimal contact between support vessels and the MODU.
- The offshore environment within the Otway region is highly dispersive, and vessels will be frequently moving; these conditions are not typically conducive to the establishment of marine organisms onto a new surface.
- There are several international and national management measures which already manage the potential introduction of IMS.

- The likelihood of the transfer of IMS between vessels within the operational area, and which may then become established elsewhere, as a result of the activities is considered **Remote (E)**.

Inherent Risk Severity

The inherent risk severity of the introduction, establishment and spread of IMS is considered **Moderate**.

6.7.5 Control Measures, ALARP, and Acceptability Assessment

Table 6-47 provides a summary of the control measures and ALARP and acceptability assessment relevant to the introduction, establishment and spread of IMS.

Table 6-47: Introduction, Establishment and Spread of IMS ALARP, Control Measures and Acceptability Assessment

Introduction, Establishment and Spread of IMS	
ALARP Decision Context and Justification	**ALARP Decision Context: Type B** The introduction, establishment and spread of IMS has been assigned a Level 4 consequence; the likelihood of this consequence occurring is considered Remote. The causes resulting in an introduction of IMS from a planned release of ballast water or biofouling are well understood and effectively managed by international and national requirements and industry guidance. Amplitude and their offshore service partners are experienced in industry requirements and their operational implementation through their existing ongoing operations. No objections or concerns were raised during consultation regarding this activity or its potential impacts and risks.
Control Measure	**Source and Description of Control**
CM20: Amplitude IMS Risk Management Protocol	The National biofouling management guidelines for the petroleum production and exploration industry (DAFF 2009) recommend a biofouling risk assessment is undertaken for vessels and MODUs and, where necessary, conducting in water inspection, cleaning and antifouling renewal. These guidelines should also be read in conjunction with the Anti-fouling and In-water Cleaning Guidelines (DoA 2015)[10]. In line with these recommendations Amplitude Energy uses an IMS Risk Assessment to evaluate IMS risks. Prior to and during operations the Amplitude IMS Risk Management Protocol will be implemented for all vessels, MODU and submersible equipment, and will consider all regions visited by the facilities (international and domestic). The Amplitude IMS Risk Management Protocol has been prepared to align with: • Advice from the Victorian Government Marine Biosecurity Section. • National biofouling management guidelines for the petroleum production and exploration industry (DAFF 2009). • Australia Biofouling Management Requirements (DAFF 2023). • Guidelines for the control and management of a ships' biofouling to minimise the transfer of invasive aquatic species (IMO Biofouling Guidelines; IMO 2023). • Reducing marine pest biosecurity risks through good practice management Information paper (NOPSEMA 2020).

[10] Draft Australian Anti-Fouling and In-Water Cleaning Guidelines were published in 2024 (**https://www.waterquality.gov.au/anz-guidelines/resources/guidance**).

Introduction, Establishment and Spread of IMS	
	Further information on the Amplitude IMS Risk Management Protocol is provided within Section 12.9.
Impact and Risk Summary	
Residual Impact Consequence	N/A
Residual Risk Consequence	**Level 4:** Extensive medium to long-term impact on highly valued ecosystems, species populations or habitats.
Likelihood	**Remote (E)**: A combination of factors would be required for an occurrence. Not expected to occur during the activity. Occur in exceptional circumstances.
Residual Risk	**Moderate**
Demonstration of Acceptability	
Principles of ESD	Introduction, establishment and spread of IMS is evaluated as having Level 4 consequence which has the potential to result in serious or irreversible environmental damage. With the established processes in place, there is little residual uncertainty associated with this aspect. The activities and impact pathways are well known, regulated and managed. It is not considered that there is significant scientific uncertainty associated with this aspect. Therefore, the precautionary principle has not been applied beyond the precautionary measures already integrated into the IMS protocol.
Legislative and Conventions	The control measures proposed to manage this risk are meet the following requirements: • *Biosecurity Act 2015 (Cwth)* - Chapter 5, Part 3 (Management of discharge of ballast water) & Chapter 4 (Managing biosecurity risks). • International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004 (the BWMC). • *Protection of the Sea (Harmful Anti-fouling Systems) Act 2006*. • AMSA Marine Order 98: Marine Pollution Prevention - Anti-fouling Systems. • *Environment Protection Act 1970 (Vic)*. • Environment Protection (Ships Ballast Water) Regulations 2006. • Australian Ballast Water Management Requirements (DAFF 2020). • Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (IMO 2023). • National Biofouling Management Guidance for the Petroleum Production and Exploration Industry (DAFF 2009). • Australia Biofouling Management Requirements (DAFF 2023).
Internal Content	Relevant management system processes adopted to implement and manage hazards to ALARP include: • Risk Management (MS03). • Health Safety and Environment Management (MS09). • Supply Chain and Procurement Management (MS11). Activities will be undertaken in accordance with the Implementation Strategy (Section 11.0).

Introduction, Establishment and Spread of IMS	
External Context	Activity will be undertaken in a manner consistent with relevant legislation, industry standards and guidelines, offshore practices and benchmarking. The activity is not predicted to result in impacts to species that would be inconsistent with recovery plans or conservation advice. No objections or claims have been received during consultation regarding IMS.
Demonstration of meeting the defined acceptable levels in the OPP	Section 9.4.6 of the **East Coast Supply Project OPP** demonstrates the acceptability of impacts and risks associated with introduction, establishment and spread of IMS. This acceptability demonstration is also valid and appropriate for the Activity (given this Activity is described and assessed in the OPP) and is supported by further evaluation against the acceptability factors as detailed above. Impacts and risks associated with the Activity are expected to be below the defined acceptable levels as described in the OPP by meeting the additional acceptability criteria described in Section 5.2.4.3, such as that for introduction, establishment and spread of IMS: • OPP EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • OPP control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence, likelihood and residual risk are the same as those defined in the OPP. • No changes to internal or external context as defined in the OPP including no additional objections and claims were raised against this aspect.
Acceptability Outcome	**Acceptable** Amplitude has determined that impacts and risks related to the introduction, establishment and spread of IMS are acceptable, based on: • The planned management of impacts and risks integrates Amplitude internal requirements, including relevant management system processes. • The activities will be managed in a way that is not inconsistent with the relevant principles of ESD. • The proposed controls and impact and risk levels are not inconsistent with national and international standards, laws, and policies including applicable plans for management and conservation advice, and significant impact guidelines for MNES. • No feedback from relevant persons has been received that would inform the values and sensitivities /existing environment, impacts and risks, performance outcomes or mitigation measures other than DEECA (Event ID 2025 0811 081516 6215 Appendix 8) regarding the presence of *Undaria pinnatifida in the Port of Portland.* To manage impacts to receptors to or below the defined acceptable levels the following EPOs have been applied: • EPO21: No introduction, establishment or spread of invasive marine species.

6.8 Accidental Hydrocarbon Release

6.8.1 Cause of Aspect

Hydrocarbons may be accidentally released into the marine environment as a result of the Activity as identified in Table 6-48 and described in subsections further below.

Table 6-48: Activities that may result in an Accidental Release of Hydrocarbons

Aspect / Phase	Activity component
Well Construction	Drilling operations
Support activities	Vessel operations

This section addresses the high order (most severe or worst-case) spill scenarios. LOC from subsea infrastructure is assessed in Table 6-4. These scenarios could result in a smaller extent, which have been captured within the EMBA and monitoring area defined and assessed within this EP.

6.8.2 Aspect Characterisation

Amplitude Energy have identified two credible, worst-case, spill scenarios that may occur during support and well construction activities during the Activity:

- A continuous release of 10,562 m^3 of condensate over 104 days as a result of a Loss of Well Containment (LOWC).
- An instantaneous release of 250 m^3 MDO over 6 hours as a result of a vessel collision rupturing a vessel fuel tank and causing a Loss of Containment (LOC).

6.8.2.1 Well Construction

A LOWC has been determined as a credible scenario with the potential to lead to an uncontrolled release of reservoir hydrocarbons or other well fluids into the environment.

There are multiple controls in place to prevent a LOWC. Multiple levels of controls must fail at each level of the control hierarchy for a LOWC to occur. These are described in detail and managed under the Well Operations Management Plan (WOMP), and facility specific Safety Case. Both documents must be accepted by NOPSEMA before an activity can occur.

6.8.2.2 Support Activities

Support activities during the Activity will include vessel operations for surveys including monitoring, IMR (including subsea inspection), towing, mooring MODU standby, and supply runs. It is considered credible that an unplanned release of MDO into the marine environment could occur as a result of hull damage or a fuel tank rupture following a vessel collision between the support vessel and another, or a support vessel and the MODU, or the support vessel and a third-party vessel. Vessel collisions typically occur due to:

- navigational error or loss of position
- mechanical failure

- extreme weather events.

Vessel grounding has not been assessed as a credible risk as there are no emergent features within the operational area.

Amplitude Energy assessed the worst-case credible spill scenario that could result from a vessel collision. As vessels have not yet been contracted, a nominal fuel tank volume was used based on AHTS vessels used during previous Amplitude Energy campaigns. This approach aligns with AMSA's guideline for indicative maximum credible spill volumes for other, non-oil tanker, vessel collision (AMSA 2015).

6.8.3 Quantitative Hydrocarbon Spill Modelling

Amplitude Energy commissioned RPS Group to conduct stochastic modelling and deterministic analysis (RPS 2023, 2024; Appendix 6 -) based on the worst-case credible scenarios (Table 6-49).

The subsea LOWC scenario was modelled on the flow rate data acquired from the drilling of the Annie-1 well. A Response Time Model (RTM) was utilised to determine the worst-case scenario and is primarily based on the location of rig available to drill the relief well. The spill duration for the worst-case scenario was determined by utilising the time to drill a relief well based on this RTM modelled. The simulation duration of the model allows for 14 days on top of the time to kill the well (104 days) to allow time for the trajectory, weathering, and fate of the total hydrocarbon release volume to be modelled. See the activity-specific SCERP for further details.

A spill of 250 m^3 was determined to be an appropriate and conservative volume for this Activity as the larger fuel tanks on board industry vessels tend to be within range of this volume. It is acknowledged that vessel fuels tanks may be smaller or larger, however, this volume is considered sufficient for this stage of planning. Also noting in the event of a fuel tank rupture, the rate of release of the overall hydrocarbon inventory on a vessel may vary, however is unlikely to be instantaneous and over such a short period of time as 6-hours

The spill modelling was performed using an advanced three-dimensional trajectory and fates model, Spill Impact Mapping Analysis Program (SIMAP). The SIMAP model calculates the transport, spreading, entrainment and evaporation of spilled hydrocarbons over time, based on the prevailing wind and current conditions, and the physical and chemical properties.

The SIMAP system, the methods and analysis presented herein use modelling algorithms which have been anonymously peer reviewed and published in international journals. Further, RPS warrants that this work meets and exceeds the ASTM Standard F2067-13 "Standard Practice for Development and Use of Oil Spill Models".

The SIMAP model can track hydrocarbons to levels lower than are biologically significant or visible to the naked eye. Therefore, reporting thresholds have been specified (based on the scientific literature) to account for "exposure" on the sea surface and "contact" to shorelines at meaningful levels.

Table 6-49: Spill Modelling Parameters for the LOWC and Vessel LOC scenarios

Parameter	**Spill Scenario**	
	LOWC	Vessel LOC
Location	Annie-2	

Parameter	Spill Scenario	
	LOWC	Vessel LOC
Maximum credible spill volume	10,562 m^3 (66,430 bbl)	250 m^3 (1,572 bbl)
Number of randomly selected spill start times	100 per season (200 per scenario)	
Model period	Summer (November to April)	
Hydrocarbon type	Annie-1 Condensate	Marine Diesel Oil (MDO)
Release type / depth (m)	Subsurface / 36 m	Surface
Release duration	104 days	6 hours
Simulation length	118 days	30 days
Surface hydrocarbon concentration thresholds (g/m^2)*	1 (low); 10 (moderate); 50 (high)	
Shoreline hydrocarbon accumulation thresholds (g/m^2)*	10 (low); 100 (moderate); 1,000 (high)	
Dissolved hydrocarbon concentrations (ppb)*	10 (low); 50 (moderate); 400 (high)	
Entrained hydrocarbon concentrations (ppb)*	10 (low); 100 (high)	

* See Table 6-2 for hydrocarbon threshold rationale.

6.8.3.1 Hydrocarbon Thresholds

Hydrocarbon spill events, have the potential to expose ecological and social receptors to different hydrocarbon expressions and concentrations. Hydrocarbon expressions include:

- surface
- shoreline
- in-water.

The concentration thresholds used in the impact assessment for the different exposure types (surface, in-water, shoreline) are described in Table 6-50. These impact thresholds and exposure pathways are then applied at a receptor level for use in the consequence evaluations. These thresholds align with the NOPSEMA environmental bulletin 'Oil Spill modelling' (NOPSEMA 2019).

Table 6-50: Hydrocarbon Impact Thresholds

Exposure Level	Impact Threshold	Justification
Surface Hydrocarbon		
Low	1 g/m^2	Approximates range of socioeconomic effects and establishes planning area for scientific monitoring.
Moderate	10 g/m^2	Approximates lower limit for harmful exposures to birds and marine mammals.
High	50 g/m^2	Approximates surface oil slick and informs response planning.
Shoreline Hydrocarbon		

Exposure Level	Impact Threshold	Justification
Low	10 g/m^2	Predicts potential for some socio-economic impact.
Moderate	100 g/m^2	Loading predicts area likely to require clean-up effort.
High	>1000 g/m^2	Loading predicts area likely to require intensive clean-up effort.
In-water – Dissolved Hydrocarbon		
Low	10 ppb	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers.
Moderate	50 ppb	Approximates potential toxic effects, particularly sublethal effects to sensitive species.
High	400 ppb	Approximates toxic effects including lethal effects to sensitive species.
In-water – Entrained Hydrocarbon		
Low	10 ppb	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers.
High	100 ppb	As appropriate given oil characteristics for informing risk evaluation.

6.8.3.2 Hydrocarbon Characteristics

The MDO selected for modelling is a light persistent hydrocarbon (classified as Group II by the International Tankers Owners Pollution Federation (ITOPF 2014), with a low dynamic viscosity and low pour point (Table 6-51). The hydrocarbon has low (10%) residual component (i.e., the component that tends not to evaporate and that may persist in the marine environment) (Table 6-51).

The condensate modelled for the LOWC scenarios was based on Annie-1 condensate; a light persistent hydrocarbon (classified as Group II (ITOPF 2014), with a low dynamic viscosity and low pour point (Table 6-51). Annie-1 condensate has been modelled as it is a conservative proxy. The condensate comprises of a significant portion of volatiles and semi- to low-volatiles (82.5% total) with 17.5% residual components. This means the condensate will evaporate readily when on the water surface, with the persistent components to remain on the water surface over time (Table 6-51).

A few specific physical characteristics were not available for Annie-1 (Table 6-51). Therefore, this information was supplemented from the Minerva condensate assay, found in a nearby reservoir and considered an appropriate analogue for this information.

Table 6-51: Physical Characteristics of Annie-1 Condensate and MDO

Type	**API**	**Pour Point (°C)**	**Density kg/m^3**	**Viscosity cP**	**Non-persistent**			**Persistent**
					Volatiles (BP < 180°C)	Semi-volatiles (180°C < BP < 265°C	Low Volatiles (265°C < BP < 380°C)	Residuals (BP > 380°C)
MDO	24	-9	890 at 25°C	14.0 at 25°C	4%	32%	54%	10%
Annie-1	41	-30*	820 at 16°C	1.063 at 20°C*	8%	46.5%	28%	17.5%

*Physical characteristics results used from Minerva condensate essay.

6.8.3.3 Weathering and Fate

A series of model weathering tests were conducted to illustrate the potential behaviour of the MDO and condensate when exposed to idealised and representative environmental conditions. The modelling reports commissioned by Amplitude Energy and produced by RPS has been attached in Appendix 6 - .

The findings are summarised in the subheadings below.

Vessel LOC - MDO

The mass balance for the MDO under constant 5 knot winds show that 34.3% of the oil will evaporate within 24 hours (Figure 6-12). Under calm conditions, the majority of the remaining oil on the water surface will weather at a slower rate as it is comprised of low volatile, longer-chain compounds.

Under variable-wind conditions where winds are of greater strength on average, entrainment of MDO into the water column is shown to increase (Figure 6-13). Approximately 24 hours after the spill, 83.1% of the oil is shown to have entrained and a further 11.4% is shown to have evaporated, leaving only a small proportion of the oil floating on the water surface (1.3%). The increased level of entrainment during variable-winds results in a higher percentage of decay at an approximate rate of 3% per day, compared to 0.4% per day during constant winds.

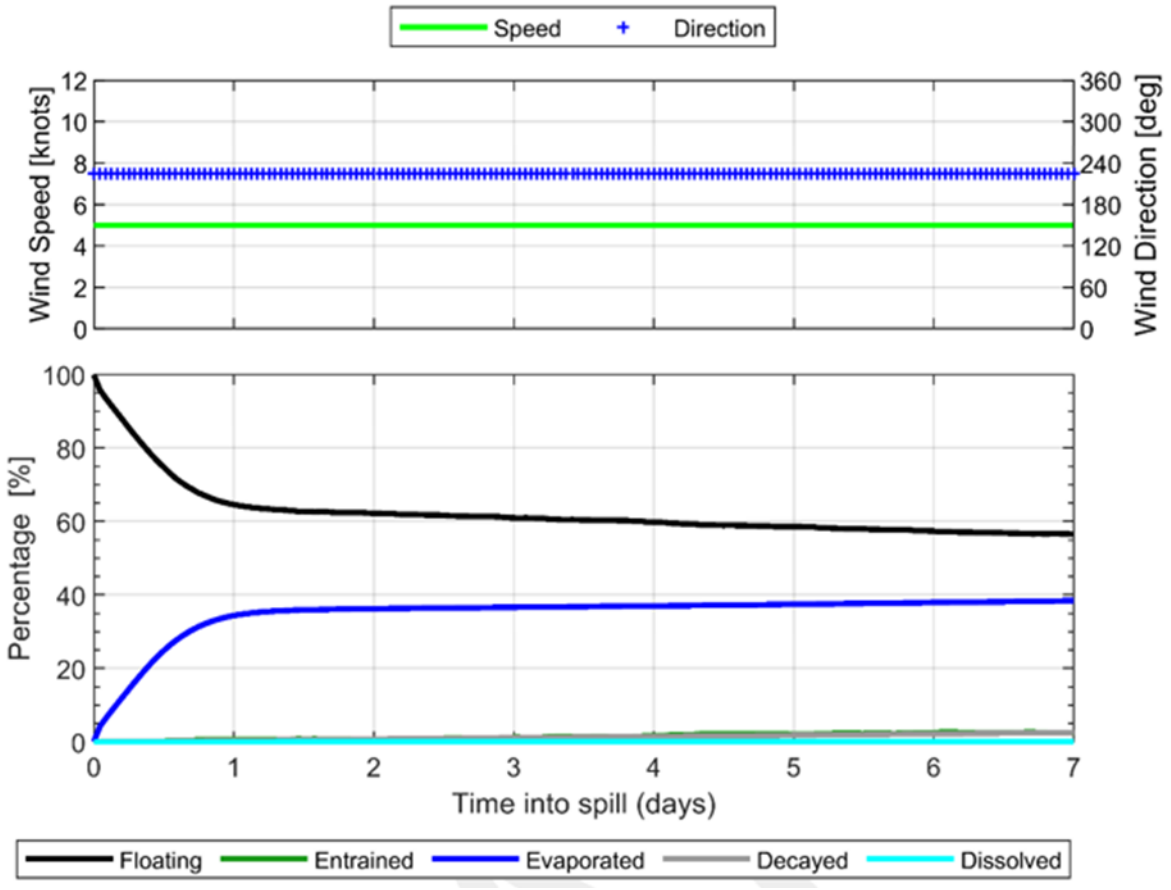


Figure 6-12: Proportional Mass Balance Plot Representing the Weathering of MDO Spilled onto the Water Surface over 1 hour and Subject to a Constant 5 knots Wind Speed at 15 °C Water Temperature (RPS 2023).

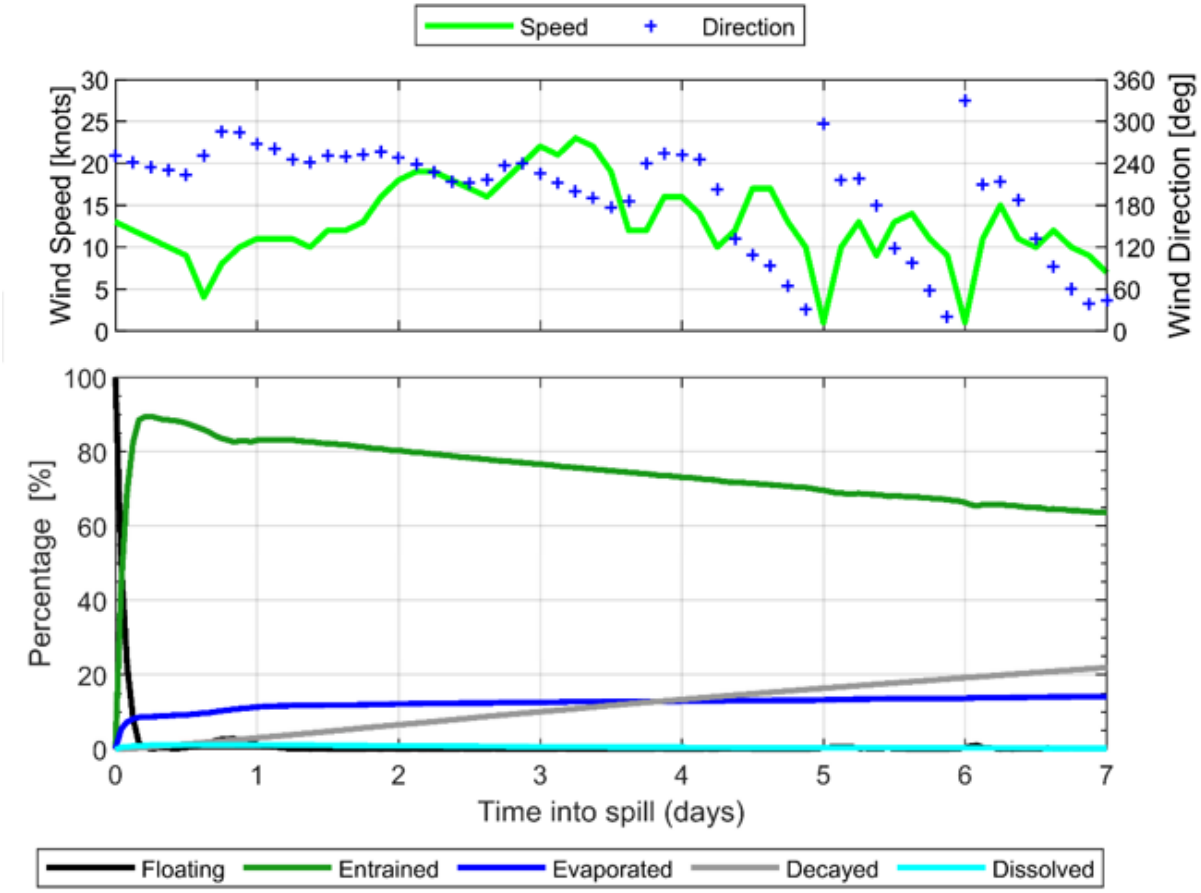


Figure 6-13: Proportional Mass Balance Plot Representing the Weathering of MDO Spilled onto the Water Surface over 1 hour and Subject to a Variable Wind Speeds (1-23 knots) at 15 °C Water Temperature (RPS 2023).

LOWC – Condensate

The mass balance for condensate under constant 5 knot winds show that 52.4% of condensate is expected to evaporate within 24 hours (Figure 6-14). Under calm conditions, the majority of the remaining condensate on the water surface will weather at a slower rate as it is comprised of less volatile, longer-chain compounds. Evaporation shall cease when only the residual compounds remain.

Under variable-winds where winds are of greater strength on average, entrainment of condensate into the water column is shown to increase (Figure 6-15). Approximately 24 hours after the spill, 70.1% of the mass is shown to have entrained and a further 23.8% has evaporated, leaving only a small proportion floating on the water surface (<1%). The increased level of entrainment during variable-winds results in a higher percentage decaying at an approximate rate of 2.5% per day, to <0.7% per day for constant-winds.

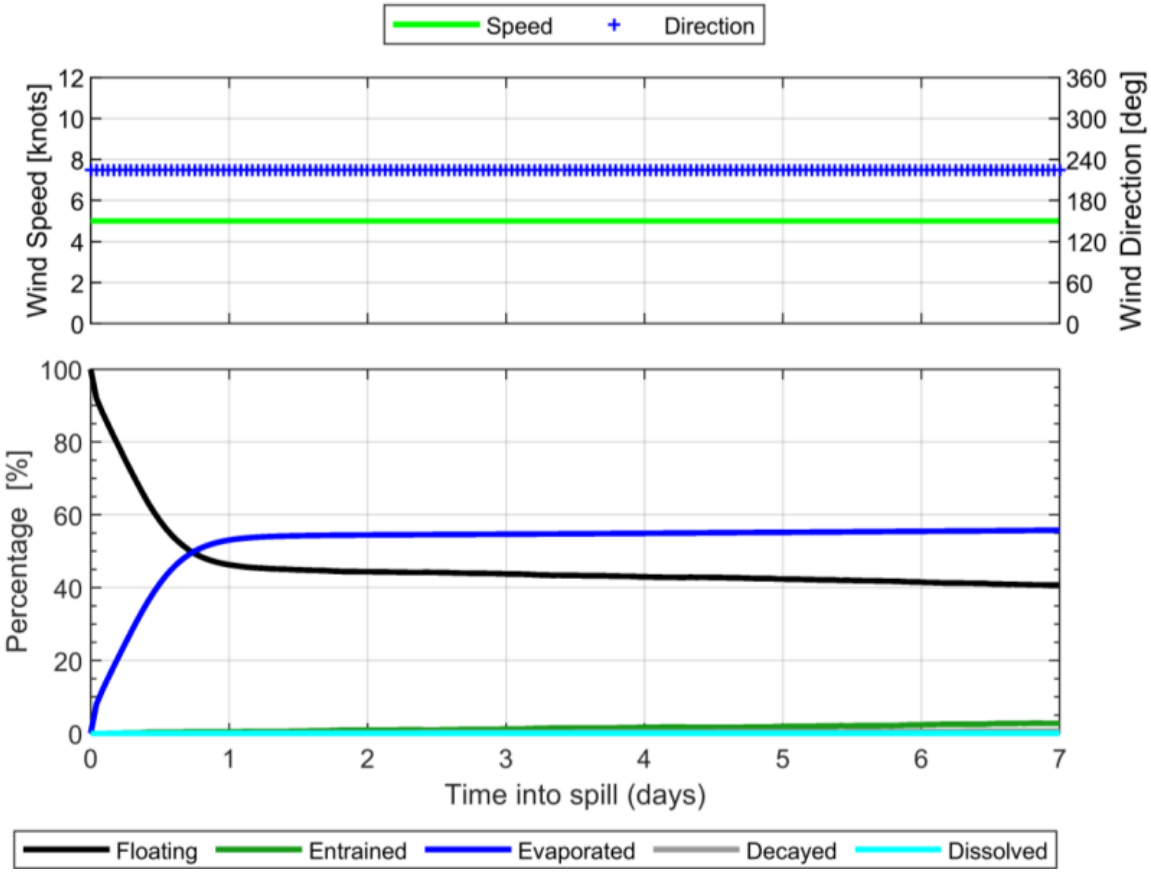


Figure 6-14: Proportional Mass Balance Plot Representing the Weathering of Annie-1 Condensate Spilled onto the Water Surface over 1 hour and Subject to a Variable Wind Speeds (1-23 knots) at 15 °C Water Temperature (RPS 2024).

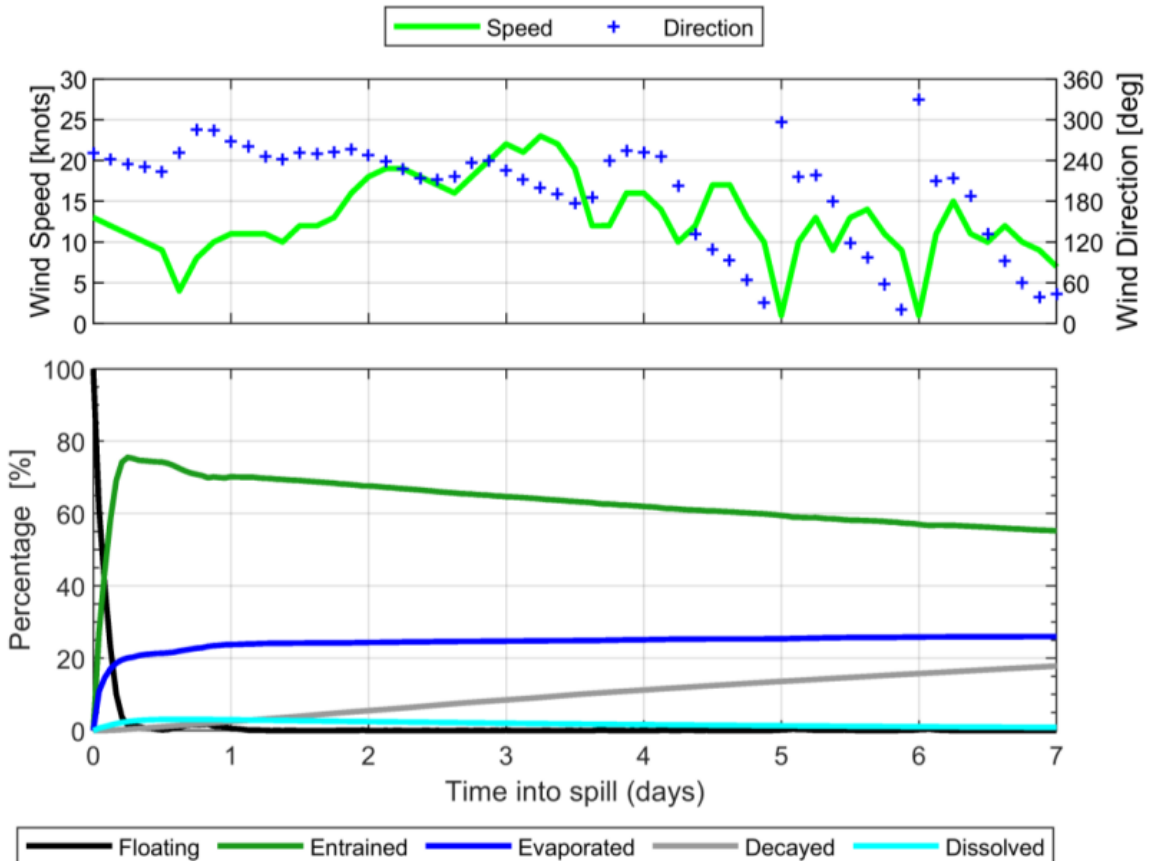


Figure 6-15: Proportional Mass Balance Plot Representing the Weathering of Annie-1 Condensate Spilled onto the Water Surface over 1 hour and Subject to a Variable Wind Speeds (1-23 knots) at 15 °C Water Temperature (RPS 2024).

6.8.3.4 Modelling Results

Stochastic Analysis

Vessel LOC – MDO

Table 6-52 provides a summary of the results from the stochastic modelling provided in Appendix 6 - for Vessel LOC (MDO) during the Activity (RPS 2023).

Table 6-52: Stochastic Modelling Output Summary for Vessel LOC - MDO

Exposure Values	Summary of worst-case predicted exposure
Surface Hydrocarbon	
Low (1 g/m^2)	Floating hydrocarbon at this level is expected to be visually detectable but not have ecological impacts. • The maximum distance for floating hydrocarbon exposure from the source was predicted to be 32.5 km. • Would intersect with BIAs for cetacean, seabird and shark species. • Would intersect with the Twelve Apostles Marine Park.
Moderate (10 g/m^2)	Floating hydrocarbon at this level has the potential to cause ecological impacts.

Exposure Values	Summary of worst-case predicted exposure
	• The maximum distance for floating hydrocarbon exposure from the source was predicted to be 10.3 km. • Would intersect with BIAs for cetacean, seabird and shark species.
High (100 g/m^2)	Surface hydrocarbon at this level is likely to cause ecological impacts. • The maximum distance for floating hydrocarbon exposure from the source was predicted to be 2.8 km. • Would intersect with BIAs for cetacean, seabird and shark species.
Shoreline Hydrocarbon	
Low (10 g/m^2)	Shoreline hydrocarbon at this level is expected to be visually detectable but not have ecological impacts. • The probability of hydrocarbon accumulation on any shoreline at or above the low threshold was 60%. • The minimum time to shore at or above the low threshold was 22 hours. • The maximum total volume of hydrocarbon ashore for a single spill trajectory was 43.2 m^3. • The maximum length of hydrocarbon ashore above the low threshold was 32 km.
Moderate (100 g/m^2)	Shoreline hydrocarbon at this level has the potential to cause ecological impacts. • The minimum time to shore at or above the moderate threshold was 1 day. • The highest maximum probability of shoreline accumulation is 28% at Corangamite. • The maximum length of hydrocarbon ashore above the moderate threshold was 11 km.
High (500 g/m^2)	Shoreline hydrocarbon at this level is likely to cause ecological impacts. • The maximum length of hydrocarbon ashore above the moderate threshold was 1 km.
In-water Exposure - Dissolved	
Low (10pb)	Dissolved hydrocarbon at this level is not expected to have ecological impacts. • The minimum time to dissolved hydrocarbon exposure at any given receptor(s) was 2 hours. • The probability of intersect with the Twelve Apostles Marine Park is 1%. • Would intersect with BIAs for cetacean, seabirds and shark species.
Moderate (50 ppb)	Dissolved hydrocarbon at this level has the potential to cause ecological impacts. • The minimum time to dissolved hydrocarbon exposure at any given receptor(s) was 5 hours. • Would intersect with BIAs for cetacean, seabirds and shark species.
High (400 ppb)	No exposure at this threshold was predicted.
In-water Exposure - Entrained	
Low (10 ppb)	Entrained hydrocarbon at this level is not expected to have ecological impacts. • The minimum time to entrained hydrocarbon exposure at any given receptor(s) was 1 hour. • Would intersect with BIAs for cetacean, seabirds and shark species.
High (100 ppb)	Entrained hydrocarbon at this level has the potential to cause ecological impacts. • The minimum time to entrained hydrocarbon exposure at any given receptor(s) was 1 hour.

Exposure Values	Summary of worst-case predicted exposure
	• Would intersect with BIAs for cetacean, seabirds and shark species.

LOWC – Condensate

Table 6-53 provides a summary of the results from the stochastic modelling report provided in Appendix 6 - for LOWC (Condensate) during the Activity (RPS 2024).

Table 6-53: Stochastic Modelling Output Summary for LOWC

Exposure Values	Summary of worst-case predicted exposure
Surface Hydrocarbon	
Low (1 g/m^2)	Floating hydrocarbon at this level is expected to be visually detectable but not have ecological impacts. • Worst-case maximum distance from the source was predicted as 55.7 km. • Would intersect with BIAs for cetacean, seabirds and shark species.
Moderate (10 g/m^2)	Floating hydrocarbon at this level is expected to be visually detectable but not have ecological impacts. • Worst-case maximum distance from the source was predicted as 3.2 km. • Would intersect with BIAs for cetacean, seabirds and shark species.
High (100 g/m^2)	No exposure at this threshold was predicted.
Shoreline Hydrocarbon	
Low (10 g/m^2)	Shoreline hydrocarbon at this level is expected to be visually detectable but not have ecological impacts, • The highest probability of shoreline accumulation was 100% at the following LGAs: – Corangamite, Moonlight Head, Colac Otway, Moyne, Bay of Islands, Cape Otway West. • The worst-case minimum time to shore at or above the low threshold was predicted to be 0.96 days (at Moyne and Bay of Islands). • The worst-case maximum length of hydrocarbon ashore at low threshold was predicted as 224 km.
Moderate (100 g/m^2)	Shoreline hydrocarbon at this level has the potential to cause ecological impacts. • The highest probability of shoreline accumulation was 100% at the following LGA: – Corangamite and Moonlight Head. • The worst-case minimum time to shore at or above the moderate threshold was predicted to be 1.25 days (at Corangamite and Port Campbell). • The worst-case maximum length of hydrocarbon ashore at the moderate threshold was predicted as 62 km.
High (1,000 g/m^2)	Shoreline hydrocarbon at this level is likely to cause ecological impacts. • The highest probability of shoreline accumulation was 27% at the following LGAs: – Corangamite. • The worst-case minimum time to shore at or above the high threshold was predicted in ~26 days (at Moyne and Bay of Isle). • The maximum length of hydrocarbon ashore at or above the high threshold was 6 km.

Exposure Values	Summary of worst-case predicted exposure
In-water Exposure - Dissolved	
Low (10pb)	Dissolved hydrocarbon at this level is not expected to have ecological impacts. • The worst-case minimum time to entrained hydrocarbon exposure at any given receptor(s) was 1.63 days across all locations. • Worst case scenario probabilities of intersect with the following conservation values and sensitivities: – Bonney Coast Upwelling KEF (1%) – Apollo AMP (1%) – Twelve Apostles Marine National Park (40%). • Probabilities of up to 50% would intersect Victoria State Waters. • Would intersect with BIAs for cetacean, seabirds and shark species.
Moderate (50 ppb)	No exposure at this threshold was predicted.
High (400 ppb)	No exposure at this threshold was predicted.
In-water Exposure - Entrained	
Low (10 ppb)	Entrained hydrocarbon at this level is not expected to have ecological impacts. • The worst-case minimum time to entrained hydrocarbon exposure at any given receptor(s) was 0.04 day across all locations. • Worst case scenario probabilities of intersect with the following conservation values and sensitivities: – AMPs: Apollo AMP (97%), Beagle AMP (36%), Zeehan AMP (9%), and Nelson AMP (7%) – MNPs: Twelve Apostles Marine Park (100%), Wilsons Promontory (60%), Discovery Bay (30%), Bunurong (28%), Point Addis (23%), Port Phillip Heads (25%), Churchill Island (12%), and Cape Howe (2%). – KEFS: Bonney Coast Upwelling (71%), West Tasmania Canyons (27%), Upwelling East of Eden (10%), Canyons on the Eastern Continental Slope (6%), Shelf Rocky Reefs (1%). – MPs: Batemans (1%) and Lower South East (3%). – MS: Mushroom MS (25%). – RAMSAR wetlands: Western Port (12%) and Port Phillip Bay Western Shoreline and Bellarine Peninsula (6%). • Would intersect with BIAs for cetacean, seabirds and shark species. • Would intersect with Victorian (100%), Tasmanian (15%), South Australian (10%), and New South Wales (2%) State Waters.
High (100 ppb)	Entrained hydrocarbon at this level has the potential to cause ecological impacts. • The worst-case minimum time to entrained hydrocarbon exposure at any given receptor(s) was 0.08 days. • Worst case scenario probabilities of intersect with the following conservation values and sensitivities: – Apollo AMP (65%) – Twelve Apostles Marine Park (100%). • No KEFs, MPs, or MSs were intersected at this threshold. • Would intersect with BIAs for cetacean and shark species.

Exposure Values	Summary of worst-case predicted exposure
	• Would intersect with Victorian State Waters only (100%).

Deterministic Analysis

Deterministic analysis was used to assess the impact of the individual simulations considered to have the greatest impact on the environment. The scenarios were selected and presented based on a variety of criteria detailed in Table 6-54 (RPS 2023; 2024).

Table 6-54: Summary of Deterministic Modelling Outcomes for the Spill Scenarios

Deterministic Analyses Criteria	Vessel LOC - MDO	LOWC - Condensate
The largest swept area for surface oil above 10 g/m^2	The maximum area of exposure on the sea surface at the visible hydrocarbon threshold (10 g/m^2) scenario reached its peak within the first day and was approximately 29 km^2.	The maximum area of exposure on the sea surface at the visible hydrocarbon threshold (10 g/m^2) scenario reached its peak within the first 3.8 days and was approximately 4.9 km^2.
The largest swept area for surface oil above 50 g/m^2	The maximum area of exposure on the sea surface at the visible hydrocarbon threshold (50 g/m^2) scenario reached its peak within the first day and was approximately 5 km^2.	There was no exposure to surface oil above 50 g/m^2.
The greatest total volume of oil ashore above 100g/m^2	The largest total volume of oil exposure ashore was 37 m^3 which occurred over 9 days.	The largest total volume of oil exposure ashore was 264.9 m^3 which occurred over 113 days.
The longest length of shoreline with oil accumulation above 100g/m^2	The maximum length of actionable shoreline hydrocarbon (100 g/m^2) was approximately 11 km.	The maximum length of actionable shoreline hydrocarbon (100 g/m^2) was approximately 56 km.
Largest area of entrained hydrocarbon exposure above 100 ppb	The maximum area of entrained hydrocarbon exposure in the water column at the response hydrocarbon threshold (100 ppb) was approximately 636 km^2. Additionally, approximately 52 m^3 remained entrained within the water column at the end of the simulation.	The maximum area of entrained hydrocarbon exposure in the water column at the response hydrocarbon threshold (100 ppb) was approximately 2,295 km^2. Additionally, approximately 1,120 m^3 remained entrained within the water column at the end of the simulation.
Largest area of dissolved hydrocarbon exposure above 50 ppb	The maximum area of dissolved hydrocarbon exposure in the water column at the response hydrocarbon threshold (50 ppb) was approximately 2 km^2.	There was no exposure to dissolved hydrocarbons above 50 ppb.

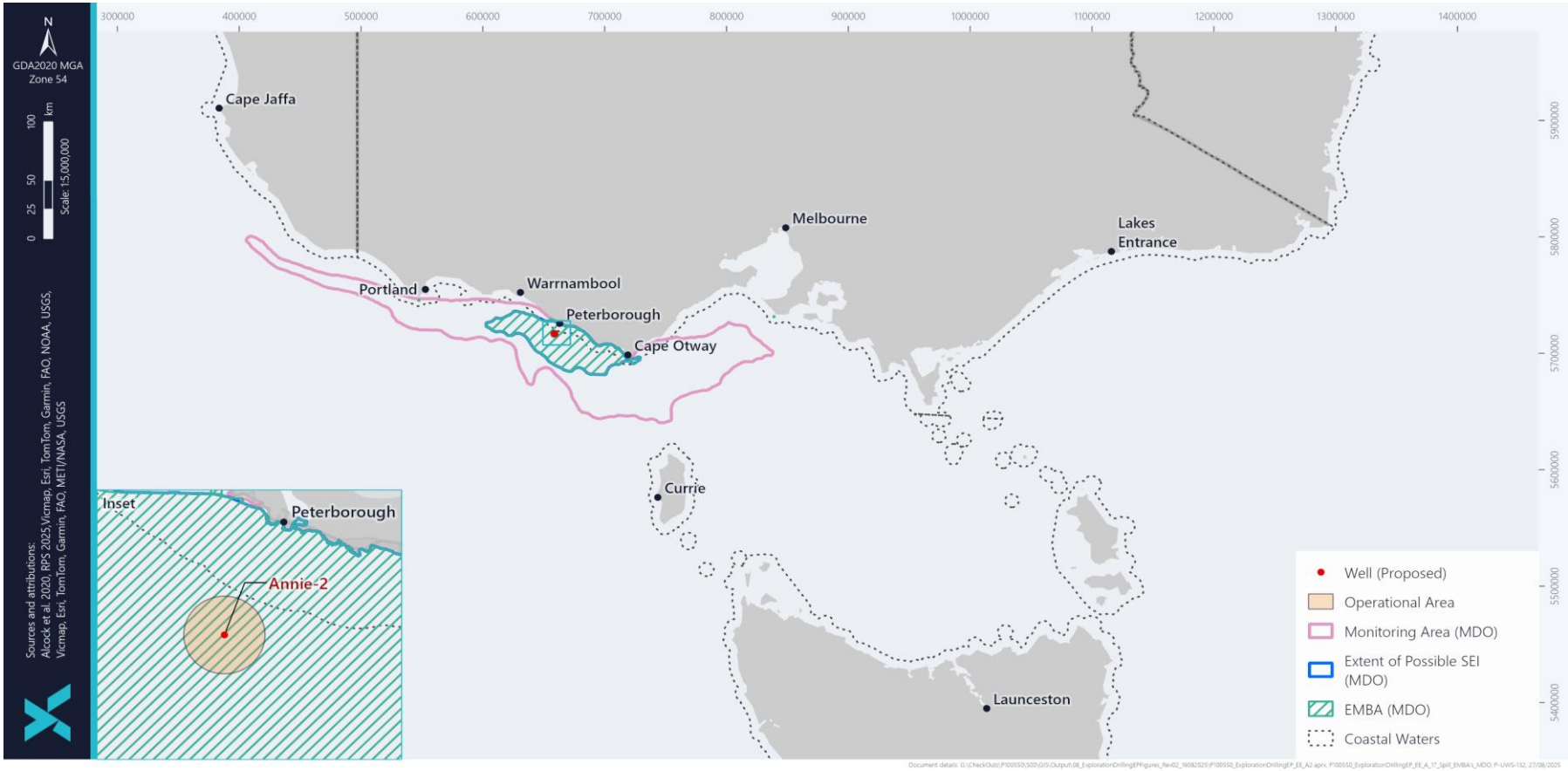


Figure 6-16: EMBA, Monitoring Area and Extent of Potential Socio-Economic (SE) Impacts for the Vessel LOC - MDO Spill Scenario
(Note: The Monitoring Area and Extent of Possible SEI threshold spill scenarios overlap in this figure. While they appear similar, they represent separate scenarios and are considered independently).

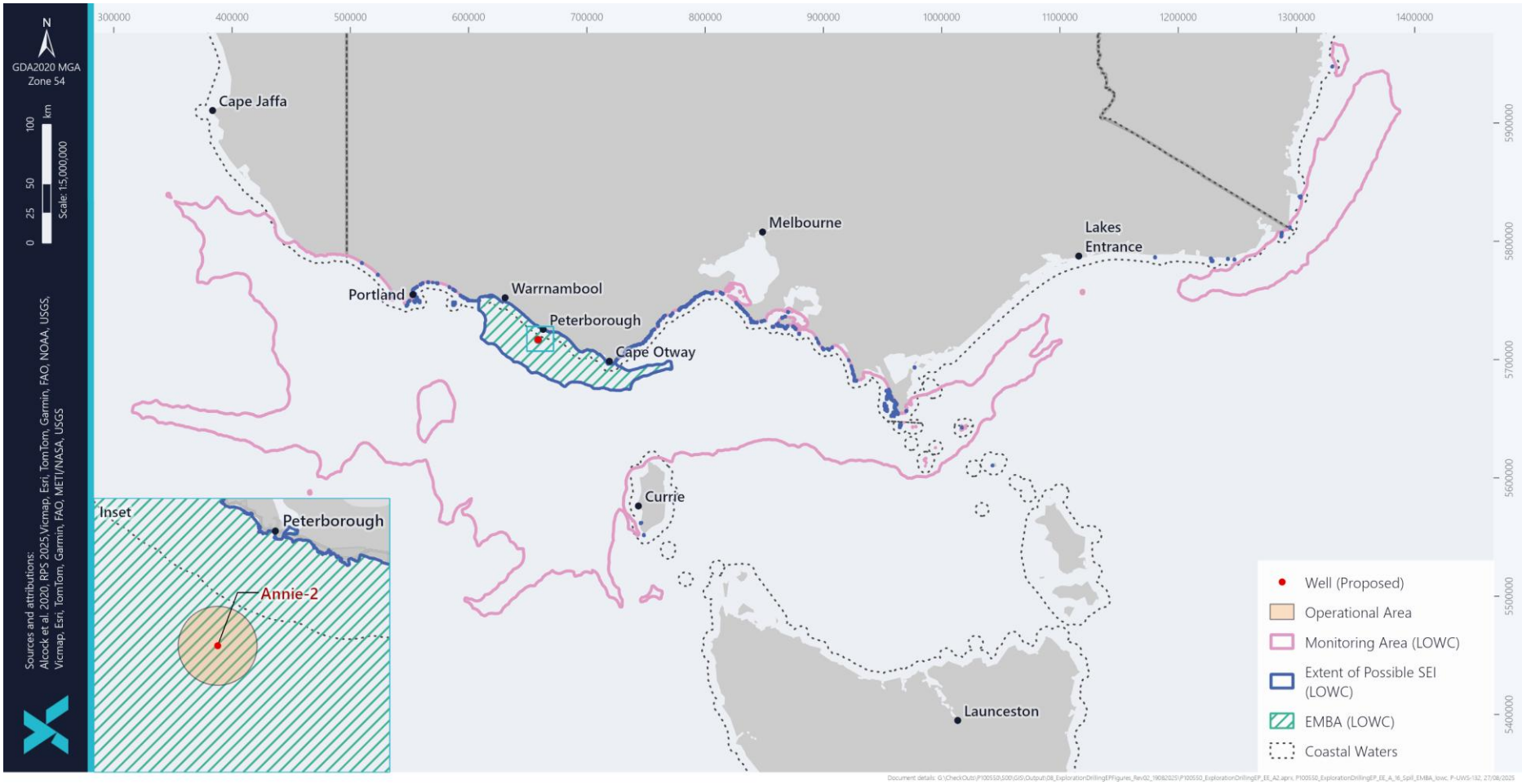


Figure 6-17: EMBA, Monitoring Area and Extent of Potential Socio-Economic (SE) Impacts for the LOWC Spill Scenario

6.8.4 Predicted Environmental Impacts and Risks

Potential impacts from an accidental release of hydrocarbons are:

- change in water quality.

Potential risk:

- change in habitat
- impact to marine fauna:
  - change in fauna behaviour
  - injury / mortality to fauna
- change in ecosystem dynamics
- change to the functions, interests, or activities of other users.

Impacts and risks to cultural heritage are assessed in Section 8.0.

6.8.5 Impact and Risk Evaluation

6.8.5.1 Impact: Change in Water Quality

Inherent Consequence Evaluation

An accidental release of hydrocarbons into the marine environment will result in a change in water quality. Annie condensate and MDO are both classified as a light non-persistent hydrocarbon (Group II), containing a high proportion of volatile components and only a small proportion of non-volatile (persistent) components.

Based on the spill modelling report for MDO approximately 34.2 - 83.1% is anticipated to evaporate from the water surface within the first 24 hours. MDO has a strong tendency to entrain within the upper water column, leaving a small proportion remaining on the water surface. Approximately 10% is residual and will remain to decay slowly over time (RPS 2023).

Regarding the condensate spill following a LOWC, approximately 52.4 - 70.1% is anticipated to evaporate from the water surface within the first 24 hours. Annie condensate has a strong tendency to entrain within the upper water column, leaving a small proportion remaining on the water surface. Approximately 17.5% is residual and will remain to decay slowly over time (RPS 2024).

High proportions of entrained hydrocarbons reduce the proportion being evaporated; however, it also increases the rates of hydrocarbon decay when mixed in the water column. Entrained hydrocarbon will often remain in the upper water column until conditions are calm then will float to the surface and reform as a slick. A change in water quality is expected to be short-term based on the weathering behaviour described above.

Given the nature of the MDO and condensate hydrocarbons, the forecasted weathering processes, and the offshore metocean conditions, the area of exposure following a spill event is anticipated to be localised and short-term. The water quality of the area exposed to hydrocarbons is expected to return to pre-spill conditions relatively rapidly. Long-term adverse impacts to the water quality are not anticipated. Matters relating to potentially impacted receptors from a change in water quality within the exposed area are discussed for the specific receptors below.

Therefore, the predicted level of impact, i.e., the consequence of a change in water quality from an accidental release of hydrocarbon is evaluated as **Level 2**.

6.8.5.2 Risk: Change in Habitat

Inherent Consequence Evaluation

Impacts to ecological receptors, such as habitats, are assessed based on the hydrocarbon exposure thresholds that have been identified to potentially cause harmful impacts in ecological receptors. The potential extent of these thresholds is determined boundary of the ecological EMBA (EMBA) which is based on the modelling (Figure 6-16 and Figure 6-17).

The thresholds that apply to the outer extent of potential ecological impacts are:

- surface (moderate)
- shoreline (moderate)
- in water – dissolved (moderate)
- in water – entrained (high).

Potential impacts to habitats are assessed in Table 6-55.

The EPBC Protected Matters Report for the EMBA (MDO) and the EMBA (LOWC) are in Appendix 5 - .

Table 6-55: Consequence Evaluation for Hydrocarbon Exposure – Ecological Receptors - Habitats

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="3">Seagrass</td></tr>
<tr><td colspan="3">Exposure Evaluation</td></tr>
<tr><td colspan="2">Condensate</td><td>MDO</td></tr>
<tr><td colspan="2">Seagrass meadows are predicted to be exposed to in-water hydrocarbons.
Hydrocarbon exposure in nearshore and intertidal areas is predicted to occur only at low thresholds for dissolved hydrocarbons, which is not expected to have ecological impacts (RPS 2024).
Exposure to entrained hydrocarbons at the high threshold level are only predicted within Victoria State Waters, not within Tasmania, South Australian or NSW State waters.</td><td>Seagrasses may be present within the EMBA (MDO) and are predicted to be exposed to in-water hydrocarbons.
Hydrocarbon exposure in nearshore and intertidal areas is predicted to occur at moderate thresholds for dissolved hydrocarbons, with some sites (such as Colac Otway, Corangamite and Moyne) predicted to be exposed to high thresholds of entrained for the worst-case scenario modelled (RPS 2023).
Potential exposure to entrained hydrocarbons at the high threshold level are only predicted within Victoria State Waters.</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>Given seagrass communities are typically found in nearshore shallow coastal waters, exposure to surface (floating) hydrocarbons is not expected.</td><td>Seagrass meadows, within intertidal or shallow nearshore waters have the potential to be exposed to in-water exposure (entrained and dissolved) only predicted to occur within the upper 0–10 m of the water column.
Seagrass meadows are important in stabilising seabed sediments, and providing nursery grounds for fish and crustaceans, and a protective habitat for the juvenile fish and invertebrates species (Huisman 2000; Kirkham 1997).
Seagrass ecosystems exposed to hydrocarbons can result in direct mortality from smothering. Petroleum fractions may also be absorbed into the seagrass tissues, which can then lower the organism’s tolerance to other stressors and reduce growth rates (Zieman et al. 1984).</td><td>Given seagrass communities are typically found in nearshore shallow coastal waters, exposure to shoreline hydrocarbons is not expected.</td></tr>
</table>

Impact and Risk Evaluation		
Summary: Given the restricted range of exposure (shallow nearshore and intertidal waters only) and the predicted lower concentrations of hydrocarbons expected to be in these waters, any impact to seagrass is not expected to result in long-term or irreversible damage. Consequently, the potential consequence to seagrass is considered to be **Level 2**, as they may result in localised short-term impacts to habitats of recognised conservation value but not affecting local ecosystem functioning.		
Macroalgae		
Exposure Evaluation		
Condensate	**MDO**	
Macroalgae are predicted to be exposed to in-water hydrocarbons. In-water hydrocarbon exposure in nearshore, intertidal, and subtidal areas is predicted to only occur at low thresholds for dissolved hydrocarbons, which is not expected to have ecological impacts (RPS 2024). Some sites (such as Colac Otway, Corangamite and Moyne) are predicted to be exposed to high thresholds of entrained (RPS 2024). Exposure to entrained hydrocarbons at the high threshold level are only predicted within Victoria State Waters, not within Tasmania, South Australian or NSW State waters. In-water exposure (entrained and dissolved) is only predicted to occur within the upper 0–10 m of the water column; therefore, benthic habitats, such as macroalgae, within intertidal or shallow nearshore waters has the potential to be exposed.	Macroalgae are predicted to be exposed to in-water hydrocarbons. In-water exposure (entrained and dissolved) is only predicted to occur within the upper 0–10 m of the water column; therefore, benthic habitats, such as macroalgae, within intertidal or shallow nearshore waters has the potential to be exposed. In-water hydrocarbon exposure in nearshore, intertidal, and subtidal areas is predicted to occur at moderate thresholds for dissolved hydrocarbons, with some sites (such as Colac Otway, Corangamite and Moyne) are predicted to be exposed to high thresholds of entrained (RPS 2023). Potential exposure to entrained hydrocarbons at the high threshold level are predicted only within Victoria State Waters.	
Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Given macroalgae are typically found within the water column attached to benthic substrate, exposure to surface (floating) hydrocarbons is not expected.	In-water exposure (entrained and dissolved) is only predicted to occur within the upper 0–10 m of the water column; therefore, macroalgae within intertidal or shallow nearshore waters has the potential to be exposed. Macroalgal systems are an important source of food and shelter for many ocean species; including in unattached drift or wrack forms (McClatchie et al. 2006).	Given macroalgae are typically found within the water column attached to benthic substrate, exposure to shoreline hydrocarbons is not expected.

Impact and Risk Evaluation		
	The physical effects of smothering, fouling and asphyxiation has been documented from oil contamination in macroalgae. Reported toxic responses to hydrocarbons have included a variety of physiological changes to enzyme systems, photosynthesis, respiration, and nucleic acid synthesis (Lewis and Pryor 2013). A review of field studies conducted after spill events by Connell et al. (1981) indicated a high degree of variability in the level of impact, but in all instances, the algae appeared to be able to recover rapidly from even very heavy hydrocarbon exposure.	
Summary: Given the restricted range of exposure (shallow nearshore and intertidal waters only) and the predicted lower concentrations of hydrocarbons expected to be in these waters, any impact to macroalgae is not expected to result in long-term or irreversible damage. Consequently, the potential consequence to macroalgae are considered to be **Level 2**, as they may result in localised short-term impacts to habitats of recognised conservation value, but not affecting local ecosystem functioning.		
Benthic Habitat		
Exposure Evaluation		
Condensate	**MDO**	
Benthic assemblages, such as soft corals and sponges, may be present within the area exposed to in-water hydrocarbons at relevant exposure thresholds following a LOWC of condensate. Corals are not identified as a dominant habitat type within the area predicted to be exposed to hydrocarbons at relevant exposure thresholds. Soft corals are typically present in deeper waters throughout the continental shelf, slope and off-slope regions, to well below the limit of light penetration. Sponges are more common in the region, occurring in patchy distribution on hard substrates over a range of depths but are more dominant in deeper waters. Refer Section 4.44.4.2 for a description of the benthic types found within the wider Monitoring area.	Benthic assemblages, such as soft corals and sponges, may be present within the area exposed to in-water hydrocarbons at relevant exposure thresholds following a LOC of MDO. Corals are not identified as a dominant habitat type within the area predicted to be exposed to hydrocarbons at relevant exposure thresholds. Soft corals are typically present in deeper waters throughout the continental shelf, slope and off-slope regions, to well below the limit of light penetration. Sponges are more common in the region, occurring in patchy distribution on hard substrates over a range of depths but are more dominant in deeper waters. Refer Section 4.44.4.2 for a description of the benthic types found within the wider Monitoring area.	

Impact and Risk Evaluation		
The worst-case scenario modelled predicted exposure at moderate (50 ppb) thresholds of dissolved, and high thresholds of both dissolved (400 ppb) and entrained (100 ppb) (RPS 2024).	The worst-case scenario modelled predicted exposure at moderate (50 ppb) thresholds of dissolved, and high thresholds of both dissolved (400 ppb) and entrained (100 ppb) (RPS 2023).	
Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Given these assemblages are benthic, exposure to surface (floating) hydrocarbons is not expected.	Exposure of entrained hydrocarbons to shallow subtidal corals has the potential to result in lethal or sublethal toxic effects, resulting in acute impacts or death at moderate to high exposure thresholds (Shigenaka 2011). Contact with corals may lead to reduced growth rates, tissue decomposition, and poor resistance and mortality of sections of reef (NOAA 2010). Exposure to hydrocarbons has been found to impact metamorphosis and attachment of sponge larvae, however, only at high concentrations of over 10,000 ppb (Negri et al. 2016). Given in-water exposure concentrations are not anticipated at this level, impacts to sponges are not anticipated. In-water exposure (dissolved or entrained) at relevant exposure thresholds is only predicted to occur within the upper 0–10 m of the water column, therefore, soft corals and sponges found in water depths below 10 m are not anticipated to be impacted by in-water hydrocarbon exposure.	Given these assemblages are benthic, exposure to shoreline hydrocarbons is not expected.
Summary: Given the lack of coral reef formations, and the sporadic cover of sponges and hard or soft corals in mixed nearshore reef communities along the Victorian coast, any impacts that may occur are anticipated to be limited to isolated corals and sponges. Consequently, the potential consequence to soft corals and sponges are considered to be **Level 1**, as they could be expected to result in localised, short-term impacts.		
Rocky Shoreline		
Exposure Evaluation		
Condensate	**MDO**	

Impact and Risk Evaluation	
Rocky shorelines are found along the Victorian coastline, particularly between Warrnambool and Cape Otway (Section 4.4) and may be present within the area exposed to shoreline hydrocarbons at relevant exposure thresholds following a LOWC of condensate. The modelling predicted shoreline accumulation to occur at, or above, the low, moderate, and high thresholds at 100%, 100%, and 27% probabilities, respectively, for various shoreline locations (RPS 2024). Shoreline contact at the moderate threshold was anticipated to occur within 1.25 days for the worst-case credible modelled scenario. The worst-case maximum total volume of hydrocarbon ashore was predicted as 312.1 m^3. The modelling also predicted rapid evaporation during the first 24 hours following the release of condensate and depending on the weather conditions (i.e., wind speeds) the remainder of the condensate is predicted to readily entrain into the water column (more entrainment under higher wind speeds) (RPS 2024). Given the hydrocarbon characteristics of the condensate, being a volatile and light non-persistent hydrocarbon with approximately 17.5% residual, including 10% wax content, majority of the volatile ends will evaporate rapidly (RPS 2024). Therefore, in the unlikely event that hydrocarbons were to reach shorelines predicted below relevant thresholds, hydrocarbon sheens would not be expected, instead isolated patches of highly weathered waxy flakes may occur.	Rocky shorelines are found along the Victoria coastline, particularly between Warrnambool and Cape Otway (Section 4.4) and may be present within the area exposed to shoreline hydrocarbons at relevant exposure thresholds following a LOC of MDO. The modelling predicted the maximum probability of shoreline loading at or above the moderate exposure of 28% with shoreline contact at this threshold anticipated within 3 days for the worst-case credible modelled scenario (RPS 2023). In favourable evaporation conditions, modelling predicted evaporation of about 4% of the oil mass in the first 12 hours and a further 32% within the first 24 hours. A further 54% should evaporate over several days, with the remainder persisting in the water column (RPS 2023).

Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Given this receptor is located on the shoreline, exposure to surface (floating) hydrocarbons is not expected.	Given this receptor is located on the shoreline, exposure to in-water hydrocarbons is not expected.	The sensitivity of a rocky shoreline to oiling is dependent on a number of factors including its topography and composition, position, exposure to oceanic waves and currents. Exposed rocky shorelines have been shown to be less sensitive than sheltered rocky shorelines. Rocky shorelines provide habitats for invertebrates and can also be utilised by some pinniped (haul-out sites) and

Impact and Risk Evaluation		
		bird species (noting that foraging and breeding/nesting typically occurs above high tide line). The impact of oil on any organism depends on the toxicity, viscosity and amount of oil, on the sensitivity of the organism and the length of time it is in contact with the oil. Even where immediate damage to rocky shores from oil spills has been considerable, it is unusual for this to result in long-term damage and the communities have often recovered within 2 or 3 years (IPIECA 1995). Due to the tidal action and constant wave washing on this type of shoreline rapid weathering of any hydrocarbons in the intertidal area is expected, and the minimal remaining oil weathers, the residual components of the oil will resolidify to waxy particles, decreasing the risk of exposures, making it unlikely that toxicity or smothering effects to exposed fauna will occur on this type of shoreline.
Summary: Due to the highly volatile nature of the hydrocarbons as a light non-persistent hydrocarbon, hydrocarbons accumulating on certain shorelines, such as rocky shorelines, may easily by washed off in the presence of tidal and/or wave action. However, rocky shorelines provide habitats to a diverse range of fauna and flora which may be impacted by exposure to hydrocarbons. Consequently, the potential impacts and risks to rocky shorelines from an unplanned hydrocarbon release event are assessed to be **Level 3** based on the potential for localised, medium-term impacts.		
Sandy Shoreline		
Exposure Evaluation		
Condensate		**MDO**
Sandy shorelines are present along the Victoria coastline (Section 4.4) where hydrocarbons may contact in the unlikely event that they are released into the marine environment. The maximum length of shoreline impacted at the moderate threshold was 34.5 km, at the Corangamite LGA. The minimum time before shoreline accumulation ranged		Sandy shorelines are the dominant shoreline type along the Victoria coastline (Section 4.4) where hydrocarbons may contact in the unlikely event that they are released into the marine environment. The maximum length of shoreline impacted at the moderate threshold was 10 km, with a maximum peak volume ashore of 43.1 m^3 – both at the Corangamite LGA (RPS

Impact and Risk Evaluation	
from 0.96 days to 66.96 days for the low to high thresholds, with a peak volume of 312.1 m^3 predicted ashore (RPS 2024). This stretch of shoreline is dominated by sandy habitats. The condensate comprises a significant portion of volatiles and semi to low volatiles (82.5% total) with 17.5% residual components, which means it will evaporate readily when on the water surface, with the persistent components to remain on the water surface over time. Given the hydrocarbon characteristics of the condensate, being a volatile and Group II non-persistent hydrocarbon, the majority of the volatile ends will evaporate rapidly (RPS 2024). Therefore, in the unlikely event that hydrocarbons were to reach the Victoria shoreline at relevant thresholds, hydrocarbon sheens would not be expected, instead isolated patches of highly weathered waxy flakes would be expected.	2023). Therefore, sandy beaches have the potential to be exposed to hydrocarbons at, or above the low, moderate, and high threshold (RPS 2023). The condensate LOWC spill scenario has been identified as the worst-case scenario for this activity. Therefore, the consequence evaluation is based on the worst-case area of exposure; the EMBA (LOWC).

Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Given this receptor is located on the shoreline, exposure to surface (floating) hydrocarbons is not expected.	Given this receptor is located on the shoreline, exposure to in-water hydrocarbons is not expected.	Sandy beaches are considered to have a low sensitivity to hydrocarbon exposure. Sandy beaches provide habitat for a diverse assemblage (although not always abundant) of infauna (including nematodes, copepods and polychaetes); and macroinvertebrates (e.g. crustaceans). In the event of shoreline contact, 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. Given the low viscosity of this residue, it is likely to permeate into sand areas. The tides and constant wave washing are expected to lead to rapid weathering of any hydrocarbons in the intertidal area and it is unlikely that

Impact and Risk Evaluation		
		toxicity or smothering effects to exposed fauna will occur on this type of shoreline. The modelling predicted rapid evaporation during the first 24 hours of the hydrocarbon release and depending on the weather conditions (i.e., wind speeds) the remainder of the condensate is predicted to readily entrain into the water column (more entrainment under higher wind speeds) (see Section 6.8.3.3). Therefore, as the volatile components of the hydrocarbon evaporates and the remaining oil weathers, the residual components of the oil will resolidify to waxy particles, and the risk of exposure decreases.
Summary: Due to the highly volatile nature of the hydrocarbons as a light non-persistent hydrocarbon, hydrocarbons accumulating on certain shorelines, such as sandy shorelines, may easily by washed off in the presence of tidal and/or wave action. Consequently, the potential impacts and risks to sandy beaches from an unplanned hydrocarbon release event are assessed to be **Level 2** based on the potential for localised, short-term impacts.		
Mangroves		
Exposure Evaluation		
Condensate		**MDO**
Mangroves are not a dominant habitat found within the area potentially exposed to hydrocarbons. However, a few isolated patches of mangroves can be found along the Victorian coastline, predominantly with inlets or bays including Western Port Bay and Corner Inlet (Section 4.4). These mangroves have the potential to be exposed to hydrocarbons within the EMBA (LOWC) (RPS 2024). Modelling of the condensate LOWC spill scenario predicted probability of accumulation to any shoreline at, or above, the moderate threshold was 100%. The maximum total volume ashore for a single spill trajectory was 312.1 m^3, and the maximum length of shoreline accumulation at the moderate and high thresholds was 34.5 km and 5.5 km, respectively.		Mangroves are not a dominant habitat found within the area potentially exposed to hydrocarbons. However, a few isolated patches of mangroves can be found along the Victorian coastline, predominantly with inlets or bays (Section 4.4). The condensate LOWC spill scenario has been identified as the worst-case scenario for this activity. Therefore, the consequence evaluation is based on the worst-case area of exposure; the EMBA (LOWC).

Impact and Risk Evaluation		
Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Mangroves are considered to have a high sensitivity to hydrocarbon exposure. Mangroves can be killed by heavy or viscous oil, or emulsification, that covers the trees' breathing pores thereby asphyxiating the subsurface roots, which depend on the pores for oxygen. Mangroves can also take up in-water hydrocarbons from contact with leaves, roots or sediments, and it is suspected that this uptake causes defoliation through leaf damage and tree death (Wardrop et al. 1987).	The change in toxicity levels within the marine environment can penetrate the root surfaces, via the respiratory capabilities of the roots, poisoning the plant. Acute impacts to mangroves can be observed within weeks of exposure, whereas chronic impacts may day months to years to detect.	Mangroves are considered to have a high sensitivity to hydrocarbon exposure. Hydrocarbon can enter mangrove forests when the tide is high and be deposited on the aerial roots and sediment surface as the tide recedes (IPIECA 1993; NOAA 2014). Physical smothering of aerial roots by hydrocarbons can block the trees' breathing pores used for oxygen intake and result in the asphyxiation of sub-surface roots (IPIECA 1993). Heavy or viscous oil, or emulsification, can kill mangroves via this process. However, heavy oil coating is unlikely due to the highly volatile nature of the hydrocarbon. As the volatile components evaporate and the remaining oil weathers, the residual components of the oil will resolidify to waxy particles, and the risk of exposure decreases. Given the non-persistent nature of the hydrocarbon there is expected to be minimal impact from smothering of aerial roots or seedlings. However, if the residual oil does melt, some impact to the root systems and seedlings may occur.
Summary: There are only a few isolated mangroves communities that may be exposed to hydrocarbons. Given the non-viscous nature of the hydrocarbons, impacts are expected to be limited to the volatile component of the hydrocarbon, however given their sensitivity to hydrocarbons, the potential consequence to mangroves is assessed to conservatively based on the potential for localised medium-term impacts to species or habitats of recognized conservation value or to local ecosystem function. Consequently, the potential impacts and risks to mangroves from an accidental hydrocarbon released is assessed to be **Level 3**.		
Coastal Saltmarsh		
Exposure Evaluation		

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="2">Condensate</td><td>MDO</td></tr>
<tr><td colspan="2">Communities of saltmarsh are predicted to be within the area potentially exposed to hydrocarbons ashore; and is present within some estuaries and inlet/riverine systems along the Victorian coastline. Some of the saltmarsh habitat along this coast will be representative of the Subtropical and Temperate Saltmarsh TEC (see Section 4.0 for further details).

Modelling of the LOWC spill scenario predicted hydrocarbon exposure at, or above the moderate threshold predominantly between Port Fairy and the east of Cape Otway along the Victorian coastline. Shoreline contact at this threshold was anticipated within 1.25 days for the worst-case credible modelled scenario. Hydrocarbon exposure at, or above, the high threshold was predicted at Peterborough, Princetown and Cape Otway (RPS 2024).</td><td>Saltmarshes may potentially be exposed to hydrocarbons in the event of shoreline accumulation following a LOC from a vessel. Saltmarsh habitats are present within estuaries, inlets, and riverine systems in many parts along the Victorian coast (Section 4.0).

The condensate LOWC spill scenario has been identified as the worst-case scenario for this activity. Therefore, the consequence evaluation is based on the worst-case area of exposure; the EMBA (LOWC).</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>Given this receptor is located on the shoreline, exposure to surface (floating) hydrocarbons is not expected.</td><td>Given this receptor is located on the shoreline, exposure to in-water hydrocarbons is not expected.</td><td>Saltmarsh is considered to have a high sensitivity to hydrocarbon exposure.

Oil can enter saltmarsh systems during the tidal cycles if the estuary/inlet is open to the ocean. Similar to mangroves, this can lead to a patchy distribution of the oil and its effects, because different places within the inlets are at different tidal heights.

Oil (in liquid form) will readily adhere to the marshes, coating the stems from tidal height to sediment surface. Heavy oil coating is unlikely due to the highly volatile nature of the hydrocarbon. As the volatile components evaporate and the minimal remaining oil weathers, the residual components of the oil will resolidify to waxy particles, and the risk of exposure decreases.

Evidence from case histories and experiments shows that the damage resulting from oiling, and recovery times of</td></tr>
</table>

Impact and Risk Evaluation		
		oiled marsh vegetation, are very variable. In areas of light to moderate oiling where oil is mainly on perennial vegetation with little penetration of sediment, the shoots of the plants may be killed but recovery can take place from the underground systems. Good recovery commonly occurs within one to two years (IPIECA 1994). However, when oil penetrates the soil and the initial mortality of the vegetation is extensive, recovery to reference conditions may take 3–4 years (Hester and Mendelssohn 2000).
Summary: The potential consequence to saltmarsh is assessed to be **Level 3** based on the potential for localised medium-term impacts to species or habitats of recognized conservation value or to local ecosystem function.		

Inherent Likelihood

Historical LOWC incidents events during development drilling have been reported at a frequency for a gas well of 4.2 x 10^{-5} per drilled well (IOGP 2019). This represents the frequency of the cause (i.e. a LOWC); additional environmental factors would be necessary for the worst-case consequences to habitats to eventuate.

Due to the nature of this activity, the multiple control measures that will be in place, and based on previous occurrences, the impact is considered conceivable and could occur, however, it would require a rare combination of factors. Therefore, the inherent likelihood of an accidental release of condensate causing Level 3 consequences to habitats is considered **Unlikely (D)**.

Inherent Risk Severity

The inherent risk severity of an accidental release of condensate causing impacts to habitats is considered **Moderate**. Table 6-56 lists the inherent risk severity for each habitat type.

Table 6-56: Inherent Risk Severity – Condensate Exposure – Ecological Receptors – Habitats

Receptor	Inherent Consequence Level	Inherent Likelihood Level	Inherent Severity
Seagrass	2	D	Low
Macroalgae	2	D	Low
Benthic Habitat	1	D	Low
Rocky Shoreline	3	D	Moderate
Sandy Shoreline	2	D	Low
Mangroves	3	D	Moderate
Coastal Saltmarsh	3	D	Moderate

6.8.5.3 Risk: Impact to Marine Fauna

Inherent Consequence Evaluation

Impacts to ecological receptors, such as marine fauna, are assessed based on the hydrocarbon exposure thresholds that have been identified to potentially cause harmful impacts in ecological receptors. The potential extent of these thresholds is determined boundary of the ecological EMBA (EMBA) which is based on the modelling (Figure 6-16 and Figure 6-17).

The thresholds that apply to the outer extent of potential ecological impacts are:

- surface (moderate)
- shoreline (moderate)
- in water – dissolved (moderate)
- in water – entrained (high).

Potential impacts to marine fauna are assessed in Table 6-57. The inherent risk severity of an accidental release of condensate causing impacts to habitats is considered **Moderate**. Table 6-56 lists the inherent risk severity for each habitat type.

Table 6-56

The EPBC Protected Matters Report for the EMBA (MDO) and the EMBA (LOWC) are in Appendix 5 - .

Table 6-57: Consequence Evaluation for Hydrocarbon Exposure – Ecological Receptors – Marine Fauna

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="3">Plankton</td></tr>
<tr><td colspan="3">Exposure Evaluation</td></tr>
<tr><td colspan="2">Condensate</td><td>MDO</td></tr>
<tr><td colspan="2">Plankton is found in nearshore and open waters in the water column.
Plankton population distributions are expected to be highly variable both spatially and temporally and are likely to comprise characteristics of tropical, southern Australian, central Bass Strait and Tasman Sea populations (see Section 4.4.2).
Plankton populations may be present within the area potentially exposed to hydrocarbons in the EMBA (LOWC).
Modelling of the condensate LOWC spill scenario predicted moderate exposure thresholds of surface hydrocarbons up to 3.2 km (east) of the release location. Exposure in nearshore and open water areas is predicted to only occur at low thresholds for dissolved hydrocarbons, which is not expected to have ecological impacts (RPS 2024). Some sites (such as Colac Otway, Corangamite and Moyne) are predicted to be exposed to high thresholds of entrained for the worst-case scenario modelled (RPS 2024).</td><td>Plankton is found in nearshore and open waters in the water column.
Plankton populations may be present within the area potentially exposed to hydrocarbons in the EMBA (MDO).
Modelling of the MDO spill scenario predicted moderate exposure thresholds of surface hydrocarbons up to 10.3 km (west) of the release location. Exposure in nearshore and open water areas is predicted to occur at moderate thresholds of dissolved with some sites predicted to be exposed to high thresholds of entrained for the worst-case scenario modelled (RPS 2023).</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>These organisms migrate vertically through the water column to feed in surface waters at night (NRDA 2012). As they move close to the sea surface it is possible that they may be exposed to surface hydrocarbons, however, the potential impacts from in-water exposure (dissolved or entrained) will be greater.
The presence of surface hydrocarbons may result in a reduction of light penetrating the water column, which may again affect the rate of photosynthesis, particularly in instances where there is prolonged presence of surface hydrocarbons over an extensive</td><td>Impacts, including injury and mortality, to planktonic species may occur due to a change in water quality following an unplanned hydrocarbon release. Plankton are widely dispersed throughout the water column, although exposure is predicted to occur within the 0-10 m water depth, where plankton are most abundant.
Relatively low concentrations of hydrocarbon are toxic to both plankton (including zooplankton and ichthyoplankton (fish eggs</td><td>Given plankton are only found within the water column, exposure to shoreline hydrocarbons is not expected.</td></tr>
</table>

Impact and Risk Evaluation		
area. A reduction in the rate of photosynthesis may inhibit growth, depending on the concentration range. For example, photosynthesis is stimulated by low concentrations of oil in the water column (10-30 ppb) but becomes progressively inhibited above 50 ppb. Conversely, photosynthesis can be stimulated below 100 ppb for exposure to weathered oil (Volkman et al. 1994).	and larvae)). Plankton risk exposure through ingestion, inhalation and dermal contact with in-water hydrocarbons. Effects will be greatest in the area close to the spill source where hydrocarbon concentrations are likely to be highest. Highly volatile hydrocarbons generally have higher toxicity levels when initially released due to the presence of the volatile components (Di Toro et al. 2007), however, with rapid weathering expected, this toxicity decreases. Furthermore, the actual area of exposure is expected to be extremely localised and temporary due to the influence of waves, currents and weathering processes. Reproduction by survivors or migration from unaffected areas is likely to rapidly replenish losses (Volkman et al. 1994). Oil spill field observations show minimal or transient effects on plankton (Volkman et al. 1994). Once background water quality is re-established, plankton has been shown to take weeks to months to recover (ITOPF 2011b), allowing for seasonal influences on the assemblage characteristics, therefore long-term impacts are not anticipated. Due to the hydrocarbon characteristics, expected weathering and fate, the relatively quick recovery times of plankton, unplanned releases of hydrocarbons are not expected to have a substantial adverse effect on plankton life cycle and spatial distribution and therefore unlikely to affect populations at the regional scale or affect local ecosystem functioning.	
Summary: Any impact is expected to be localised and temporary, meaning that an oil spill in any one location is unlikely to have long-lasting impacts on plankton populations at a regional level. Once background water quality is re-established, plankton has been shown to take weeks to months to recover. Consequently, the potential impacts to plankton are considered to be **Level 2** as they could be expected to result in localised short-term impacts, but not affecting local ecosystem functioning.		
Benthic Invertebrates		
Exposure Evaluation		

<table>
<tr><th colspan="3">Impact and Risk Evaluation</th></tr>
<tr><th>Condensate</th><th colspan="2">MDO</th></tr>
<tr><td>Marine invertebrates identified within the region, including commercially important species, may be impacted by in-water exposure of hydrocarbon expected to occur within the upper 0–10 m of the water column and shallow coastal areas of the EMBA (condensate LOWC).

Invertebrates that live in intertidal zones include crustaceans, molluscs and infauna. These can be present in a wide range of habitats including sandy beaches and rocky shores.

Modelling of the condensate LOWC spill scenario predicted in nearshore and intertidal areas is predicted to occur at low and high thresholds for entrained. No exposure at moderate or high thresholds was predicted for dissolved in-water hydrocarbons from the condensate LOWC modelled scenario (RPS 2024).</td><td colspan="2">Marine invertebrates identified within the region, including commercially important species, may be impacted by in-water exposure of MDO expected to occur within the upper 0–10 m of the water column and shallow coastal areas of the EMBA (MDO).

Exposure to hydrocarbons for invertebrates is typically via direct contact and smothering but can also occur via ingestion.

Modelling of the MDO spill scenario predicted exposure in nearshore and intertidal areas is predicted to occur at low thresholds of dissolved and entrained, moderate thresholds of dissolved, with some sites predicted to be exposed to high thresholds of entrained for the worst-case scenario modelled. The maximum dissolved and entrained hydrocarbon concentration for the MDO spill scenario at any given receptor(s) to be 77 ppb and 5,819 ppb, respectively (RPS 2023).</td></tr>
<tr><th colspan="3">Consequence Evaluation</th></tr>
<tr><th>Surface Exposure</th><th>In-water Exposure</th><th>Shoreline Exposure</th></tr>
<tr><td>Given invertebrates are only found within the shallow nearshore waters, exposure to surface (floating) hydrocarbons is not expected.</td><td>Entrained and dissolved hydrocarbons can have negative impacts on marine invertebrates and associated larval forms. Impacts to some adult species (e.g. crustaceans) is reduced as a result of the presence of an exoskeleton, while others with no exoskeleton and larval forms may be more prone to impacts.

Acute or chronic exposure through contact and/or ingestion can result in toxicological risks. For some taxa, the presence of an exoskeleton (e.g. crustaceans) reduces the impact of hydrocarbon absorption through the surface membrane. Invertebrates with no exoskeleton and larval forms may be more prone to impacts. Sessile invertebrates could be exposed to varying levels of condensate; exposure timeframes would be expected to be short given the propensity of condensate to rapidly evaporate and disperse. Localised impacts to larval</td><td>Inshore and intertidal benthic species may be exposed to hydrocarbons accumulating on the shoreline. Benthic communities associated with inshore reefs would be exposed to very low-level hydrocarbons.

The predicted area of shoreline contact is mixed sand/shore platform. Residues deposited on these areas are rapidly remobilised due to wave and tidal action, so any accumulation is likely to be short-term and temporary.

Exposure to hydrocarbons for invertebrates is typically via direct</td></tr>
</table>

Impact and Risk Evaluation		
	stages may occur which could impact on population recruitment that year. Filter-feeding benthic invertebrates such as sponges, bryozoans, abalone and hydroids may be exposed to sub-lethal impacts, however, population level impacts are considered unlikely. Exposure to hydrocarbons has been found to impact metamorphosis and attachment of sponge larvae, however, only at high concentrations of over 10,000 ppb (Negri et al. 2016). Given in-water exposure concentrations are not anticipated at this level, impacts to sponges are not anticipated. Tissue taint may occur and remain for several months in some species (e.g. lobster, abalone) however, this will be localised and low level with recovery expected. Tainting of recreation or commercial species is considered unlikely to occur, however if it did it is expected to be localised, low level and recoverable.	contact and smothering but can also occur via ingestion. At 100 g/m^2, resident fauna such as worms, molluscs and crustaceans may suffer lethal impacts if hydrocarbons penetrate into sediments. On this basis, impacts to near-shore benthic and shoreline assemblages are considered to be limited, localised, and if impacts occur, areas will be rapidly recolonised by adjacent species
Summary: Due to the characteristics of the hydrocarbons and the well-mixed nature of the waters, coating of benthic assemblages and prolonged exposure to hydrocarbons is considered highly unlikely. At this threshold, there may be ecological impacts to benthic assemblages stranded on the shoreline. However, wave action at the shoreline will rapidly disperse and weather the hydrocarbons naturally. Consequently, the potential impacts to invertebrates are considered to be **Level 2** as they could be expected to result in localised short-term impacts to species/habitats of recognised conservation value but not affecting local ecosystem functioning.		
Fish and Sharks		
Exposure Evaluation		
Condensate	**MDO**	
Several fish species may be present within the EMBA (LOWC). Species present in the EMBA (LOWC) are largely cool temperate species, common within the South Eastern Marine Region.	Several fish species may be present within the EMBA (MDO). BIAs identified within the EMBA (MDO) at the relevant thresholds are: • Distribution BIA for the white shark (surface exposure).	

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="2">BIAs overlapped with the EMBA (LOWC) at the relevant thresholds are:
• Distribution BIA for the white shark (surface exposure).
• Distribution and foraging BIAs for the white shark (entrained exposure only).
See Section 4.4.2 for details of all EPBC-listed fish species within the wider Monitoring Area.</td><td>• Distribution BIA for the white shark (by dissolved and entrained), and foraging BIA for entrained exposure only.
See Section 4.4.2 for details of all EPBC-listed fish species within the wider Monitoring Area.</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>Since fish and sharks do not generally break the sea surface, the impacts of surface hydrocarbons to fish and shark species are unlikely to occur. Near the sea surface, fish are able to detect and avoid contact with surface slicks meaning fish mortalities rarely occur in the event of a hydrocarbon spill in open waters (Volkman et al. 1994).</td><td>Fish may be exposed to hydrocarbon droplets through a variety of pathways, including direct dermal contact with diffusion across their gills (Hook et al., 2016); ingestion of contaminated prey; and inhalation (e.g. elevated dissolved contaminant concentrations in water passing over the gills). Pelagic fish species are able to detect and avoid contact with surface slicks meaning fish mortalities rarely occur in the event of a hydrocarbon spill in open waters. Adult fish kills reported after oil spills, occur mainly to shallow water, near-shore benthic species (Volkman et al. 1994).
Fish are most vulnerable to hydrocarbons during their embryonic, larval and juvenile life stages. Embryos and larvae may sustain mechanical damage to feeding and breathing apparatus from contact with oil droplets, and genetic damage, physical deformities and altered developmental timing from hydrocarbons in water (Fodrie and Heck 2011). There may also be chronic effects to fish exposed to hydrocarbons in early life stages, such as disruption of predator avoidance behaviour (Hjermann et al. 2007). Eggs and larvae exposed to weathered concentrations of hydrocarbons in water for a prolonged period of time have been shown to be immunosuppressed (Hjermann et al. 2007).</td><td>Given fish and sharks are found within nearshore and offshore waters, exposure to shoreline hydrocarbons is not expected.</td></tr>
</table>

Impact and Risk Evaluation		
	There is a known distribution and foraging BIA for the white shark in the area exposed to in-water hydrocarbons (RPS 2023). Pelagic species including white sharks, are generally highly mobile, with wide-spread distribution ranges. Therefore, these species are not likely to be severely impacted by a spill which has relatively limited spatial extent. Furthermore, long-term damage is not expected as the dissolved/entrained hydrocarbons within the water column beyond the immediate vicinity of the release are not predicted to be of sufficient concentrations over a large enough area to cause harm (ITOPF 2011a).	
Summary: There is a known distribution and foraging BIA for the white shark in the area exposed to in-water hydrocarbons. Pelagic free-swimming fish and shark species are generally highly mobile, with wide-spread distribution ranges, and therefore, are unlikely to suffer long-term damage from oil spill exposure because dissolved/entrained hydrocarbons in the water column beyond the immediate vicinity of the release are not expected to be of sufficient concentrations over a large enough area to cause harm (ITOPF 2011a). Furthermore, potential impacts on eggs and larvae entrained in the upper water column are not expected to be significant given the temporary period of water quality impairment, and the limited geographical extent of the spill. As egg/larvae dispersal is extensive in the upper layers of the water column and it is expected that current induced drift will rapidly replace any affected populations. Potential impacts are assessed as **Level 2** as they could be expected to be localised and short-term impacts to species of recognised conservation value, but not affecting local ecosystem functioning.		
Avifauna		
Exposure Evaluation		
Condensate	**MDO**	
Several threatened, migratory and/or listed marine avifauna species may be present within the EMBA (LOWC). These species have the potential to be resting, feeding or nesting within the area predicted to be exposed to hydrocarbons found on the surface, in-water and/or ashore.	Several threatened, migratory and/or listed marine avifauna species may be present within the EMBA (MDO spill). These species have the potential to be resting, feeding or nesting within the area predicted to be exposed to hydrocarbons found on the surface, in-water and/or ashore.	

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="2">Several foraging BIAs for several albatross, shearwater, petrel and gannet species were identified within EMBA (LOWC) at relevant exposure thresholds, these included:
Antipodean albatross
Black petrel
Black-browed albatross
Buller’s albatross
Campbell albatross
Common diving-petrel
Indian, yellow-nosed albatross
Short-tailed shearwater
Shy albatross
Wandering albatross
Wedge-tailed shearwater
White-faced storm-petrel
Modelling of the LOWC spill scenario predicted moderate exposure thresholds of surface hydrocarbons up to 3.2 km (east) of the release location and 57% probability of floating oil exposure at moderate exposure thresholds for all avifauna foraging BIAs (RPS 2024).
No breeding or migration BIAs were identified within the EMBA (LOWC) at relevant exposure thresholds.
See Section 4.4.2 for further details of these species listed above, and all other EPBC listed species within the wider Monitoring EMBA.</td><td>Several foraging BIAs for several albatross, shearwater, petrel and gannet species were identified within EMBA (MDO), these included:
Antipodean albatross
Australasian gannet
Black-browed albatross
Buller’s albatross
Campbell albatross
Common diving-petrel
Indian, yellow-nosed albatross
Short-tailed shearwater
Shy albatross
Wandering albatross
White-faced storm-petrel
Modelling of the MDO spill scenario predicted moderate exposure thresholds of surface hydrocarbons up to 10.3 km (west) of the release location and 100% probability of floating oil exposure at moderate exposure thresholds for all avifauna foraging BIAs (RPS 2023).
No breeding or migration BIAs were identified within the EMBA (MDO) at relevant exposure thresholds.
See Section 4.4.2 for further details of these species listed above, and all other EPBC listed species within the wider Monitoring EMBA.</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>Avifauna have the potential to be rafting, resting, diving and feeding within the area predicted to be contacted by surface hydrocarbons; diving or foraging within in-water hydrocarbons; and foraging and nesting within shoreline exposure.</td><td>Seabirds could be impacted by in-water hydrocarbon exposure directly (i.e., whilst diving through the water column foraging) or indirectly (i.e. by consuming hydrocarbon-tainted fish, resulting in sub-lethal or toxic impacts).</td><td>Shoreline species may suffer both direct oiling and potential displacement from foraging and nesting sites. Acute or chronic toxicity impacts (death or long-</td></tr>
</table>

Impact and Risk Evaluation		
Direct contact with hydrocarbons is likely to foul plumage, which may result in hypothermia due to a reduction in the ability of the bird to thermo-regulate and impaired waterproofing (ITOPF 2011a). A loss of water-proofing results increased heat loss, subsequently resulting in an increased metabolism of food reserves in the body, which may lead to emaciation (DSEWPaC 2011a). A bird suffering from cold, exhaustion and a loss of buoyancy (resulting from fouling of plumage) may dehydrate, drown or starve (ITOPF 2011a; DSEWPaC 2011a; AMSA 2013). Physical smothering may also result in impaired navigation and flight performance (Hook et al. 2016). Inhalation or direct ingestion from preening of oiled feathers may result in internal tissue irritation in their lungs and stomachs (ITOPF 2011a). This has the potential to result in mortality depending on the amount consumed.	Impacts to prey (i.e. pelagic fish) following a hydrocarbon release may disrupt and limit food supply both for the maintenance of adults and the provisioning of young. Penguins may be especially vulnerable to oil because they spend a high portion of their time in the water and readily lose insulation and buoyancy if their feathers are oiled. Previous spills have recorded large death tolls of penguins, however these have all been spill of heavy fuel all, such as the Iron Baron vessel spill, of 325 tonnes of bunker fuel in Tasmania in 1995, is estimated to have resulted in the death of up to 20,000 penguins (Hook et al. 2016). However, the presence of birds within in-water hydrocarbons at moderate exposure levels is expected to be limited, due to the transitory nature of most foraging individuals and the absence of offshore aggregation areas in the area. There are foraging BIAs for a number of bird species in the area exposed to in-water hydrocarbons (RPS 2023). However, the foraging BIAs are typical over relatively extensive areas, therefore, impacts are not anticipated at a population level due to the localised and temporary exposure of moderate levels of surface hydrocarbons.	term poor health) to small numbers of birds is possible, however this is not considered significant at a population level. Direct impacts to habitats at breeding sites may occur, subsequently contaminating nests (Clarke 1984). Oiled fauna may track oil into their nests, which may then have subsequent impacts on any eggs present. Given the volatility of the exposed oil, any impact to nests is expected to occur to individuals and not considered to pose a long-term risk at population level. Impacts to bird species are not anticipated to be long-term or affect population functioning due to the widespread areas available for foraging, the transitory nature of foraging birds, the absence of offshore aggregation areas in the area, and the weathering properties of the condensate.
Summary: Acute or chronic toxicity impacts (death or long-term poor health) to seabirds is possible, however, the presence of birds within areas exposed to moderate threshold levels is expected to be limited, due to the transitory nature of foraging individuals, and given the absence of offshore aggregation areas in the area. Therefore, impacts to these species are not anticipated to be long-term or affect population functioning due to the widespread areas available for foraging and breeding, the transitory nature of foraging birds, the absence of offshore aggregation areas in the area, and the weathering properties of the condensate. Consequently, the potential impacts and risks to avifauna are considered to be **Level 3** as they could be expected to result in localised, medium-term impacts to species or habitats of recognized conservation value or to local ecosystem function.		
Marine Reptiles		
Exposure Evaluation		

Impact and Risk Evaluation	
Condensate	**MDO**
There may be marine turtles in the area predicted to be exposed to hydrocarbons at relevant exposure levels. Marine turtles may be exposed when transiting through the in-water hydrocarbons, surfacing to breathe within the surface slick, or nesting on oiled shorelines. Five EPBC listed species have the potential to be present within the EMBA (LOWC), these include: • Loggerhead turtle • Green turtle • Leather back turtle • Hawksbill turtle • Flatback turtle However, there are no BIAs or habitat critical areas to the survival of the species within the EMBA (LOWC).	There may be marine turtles in the area predicted to be exposed to hydrocarbons at relevant exposure levels. However, there are no BIAs or habitat critical to the survival of the species within the EMBA (MDO). The condensate LOWC spill scenario has been identified as the worst-case scenario for this activity. Therefore, the consequence evaluation is based on the worst-case area of exposure; the EMBA (LOWC).

Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Hydrocarbons can be ingested as marine turtles make large, rapid inhalations before they dive which may result in inhalation of toxic vapours from hydrocarbons in surface waters which may cause harm to the internal organs of turtles. This can lead to respiratory irritation, inflammation, emphysema or pneumonia (NOAA 2010).	Entrained hydrocarbons within the water column can adhere to body surfaces (Gagnon and Rawson 2011) and can enter cavities such as the eyes, nostrils, or mouth. This can cause an elevated susceptibility to infections (NOAA 2010). Historically, very few marine turtles have been identified to be impacted following previously hydrocarbon spill, despite occurring in areas where they are known to be relatively abundant (Short 2011). However, oiling has been shown to have the potential to cause mortality depending on the size of the individual and the extent of oiling (DWH Natural Resource Damage Assessment Trustees, 2016). Following the Macondo spill in the Gulf of Mexico, a	Marine turtles may experience oiling impacts on nesting beaches when they come ashore to lay their eggs. There is potential for contamination of turtle eggs to result in toxic impacts to developing embryos. Turtle hatchlings are expected to be more vulnerable to smothering as they emerge from the nests and make their way over the intertidal area to the open water (AMSA 2015). Hatchlings that contact oil residues while crossing a beach can exhibit a range of effects

Impact and Risk Evaluation		
	large number of marine turtles were found dead, however a significant number was found alive and oiled, which were later successfully released. Indicating that oiling does not necessarily lead to mortality (NOAA 2013). The number of marine turtles that may be exposed to hydrocarbons during a hydrocarbon release is expected to be low due to the localised and temporary presence of hydrocarbons at moderate exposure levels, the low number of turtles foraging or migrating through Otway Basin in general. The potential impact would be limited to individual transiting marine turtles, with population impacts not anticipated.	including impaired movement and bodily functions (Shigenaka 2011). Hatchlings sticky with oily residues may also have more difficulty crawling and swimming, rendering them more vulnerable to predation. The absence of BIAs or habitat critical to the survival of the species within this area indicates that the number of turtles impacted by a shoreline exposure is low. The potential impact would be limited to individual transiting marine turtles, with population impacts not anticipated.
Summary: Marine pollution is listed as a threat to marine turtle in the Recovery Plan for Marine Turtles in Australia, 2017 – 2027, particularly in relation to shoreline oiling of nesting beaches. The number of marine turtles that may be exposed to hydrocarbons during a LOWC event is expected to be low due to the localised and temporary presence of hydrocarbons at moderate exposure levels, the low number of turtles foraging or migrating through Otway Basin in general, and the absence of BIAs or habitat critical to the survival of the species within this area. The potential impact would be limited to individual transiting marine turtles, with population impacts not anticipated. Consequently, the potential impacts and risks to marine reptiles are considered to be **Level 2** as localised short-term impacts to species of recognised conservation value, but not affecting local ecosystem functioning.		
Pinnipeds		
Exposure Evaluation		
Condensate		**MDO**
There may be pinnipeds in the area predicted to affected by hydrocarbons. Pinnipeds that are present within the EMBA (LOWC), such as the Australian and New Zealand fur seal, have the potential to be impacted by surface hydrocarbons when surfacing to breathe, in-water hydrocarbons when transiting through the area, and shoreline accumulated hydrocarbons that occur at haul-out sites along the coastline.		Pinnipeds such as the Australian sea lion, Southern elephant seal and the New Zealand and Australian fur-seals, may be within the area predicted to affected by hydrocarbons. However, there are no BIAs or habitat critical to survival of species within the EMBA (MDO) at relevant exposure thresholds.

Impact and Risk Evaluation		
There are no BIAs or biologically important behaviours for pinnipeds within the EMBA (LOWC) at relevant exposure thresholds.		
Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Exposure to surface hydrocarbons at, or above the moderate threshold can cause skin and eye irritations and disruptions to thermal regulation due to covering of insulating fur. Hook et al. (2016) reports that seals appear not to be very sensitive to contact with oil, but instead to the toxic impacts from the inhalation of volatile components. ITOPF (2011a) demonstrates that species that rely on fur to regulate their body temperature (such as fur-seals) are most vulnerable to oil, as the animals may die from hypothermia or overheating, depending on the season, if the fur becomes matted with oil. Heavy oil coating and tar deposits on fur-seals may also result in reduced swimming ability and lack of mobility out of the water. Heavy coating is not expected given the volatile components of the hydrocarbon will evaporate, and the minimal remaining oil will weather. The residual component of the oil is expected to resolidify to waxy particles, decreasing the risk of exposure.	Pinnipeds may be impacted by in-water hydrocarbon exposure as they have high site fidelity to established colonies and haul-out areas. This is corroborated by Geraci and St. Aubins (1988) who recorded seals, sea- lions and fur-seals swimming in oil slicks during a number of documented spills. Indicating that they are less likely to practice avoidance behaviours in the event of a hydrocarbon release. However, there are no BIAs or biologically important behaviour for pinnipeds within the area predicted to be exposed to released hydrocarbon. Hydrocarbons in the water column or consumption of prey affected by the oil may cause sub-lethal impacts to pinnipeds, however given the localised nature of the spill, and the rapid loss of the volatile components of condensate in choppy and windy seas (such as that of the EMBA), impacts are expected to be temporary and localised.	Pinnipeds hauling out on exposed shores could be exposed by direct contact of oil with skin/body. Individual adults may also be impacted by oil while transiting through the nearshore environments at haul-out sites that may be impacted from the spill event. Although, direct oiling is possible, it is expected to have a limited window for occurring due to rapid weathering of condensate. However, there are no BIAs or biologically important behaviours for pinnipeds within the area predicted to be exposed to released hydrocarbon.
Summary: Conservation Listing Advice for the Neophoca cinerea (Australian sea lion) (TSSC 2020c) identifies oil spills as a potential threat to habitat. However, activities within this EP will not be inconsistent with the conservation and management priorities outlined in this advice. Given condensate is considered a light hydrocarbon that rapidly evaporates, the number of pinnipeds exposed is expected to be low, with population impacts not anticipated, due to the localised and temporary presence of hydrocarbons at moderate exposure levels and the absence of BIAs in the area. The potential impacts to pinnipeds from a shoreline hydrocarbon exposure event are considered to be **Level 3**, as the impacts could be expected to result in localised, medium-term impacts to species/habitats of recognised conservation value but not affecting local ecosystem functioning.		
Cetaceans		

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="3">Exposure Evaluation</td></tr>
<tr><td colspan="2">Condensate</td><td>MDO</td></tr>
<tr><td colspan="2">Several threatened, migratory and/or listed marine cetaceans’ species have the potential to be within the condensate LOWC EMBA. Cetaceans may come into contact with hydrocarbons when transiting through or foraging within the exposed area.
The following BIAs are within the EMBA (LOWC) exposed to hydrocarbons at moderate exposure levels:
• Pygmy blue whale known foraging and distribution BIAs
• Southern right whale aggregation and known core range BIAs
Surface hydrocarbons are anticipated to extend for a maximum of ~55.7 km and ~3.2 km at the low and moderate thresholds respectively, in the worst-case scenario modelled (RPS 2024). No surface exposure at the high threshold was modelled for the LOWC spill scenario. Therefore, potential exposure to moderate levels of surface hydrocarbons is expected to be limited to transient individuals given the localised moderate exposure area (<3.2 km from the release site).
In-water hydrocarbons are mostly predicted to occur at low thresholds of dissolved (up to 50%) and entrained up to (100%), with high probabilities of high thresholds of entrained (up to 100%) (RPS 2024).</td><td>Several threatened, migratory and/or listed marine cetacean species have the potential to be migrating, resting or foraging within the EMBA (MDO). Cetaceans may come into contact with hydrocarbons when transiting through or foraging within the exposed area.
The following BIAs are within the EMBA (MDO) exposed to hydrocarbons at moderate exposure levels:
• Pygmy blue whale known foraging and distribution BIAs
• Southern right whale aggregation, migration and resting on migration BIAs.
Surface hydrocarbons are anticipated to extend for a maximum of ~32.5 km, ~10.3 km and ~2.8 km at the low, moderate and high thresholds, respectively, in the worst-case scenario modelled (RPS 2023). Therefore, potential exposure to moderate levels of surface hydrocarbons is expected to be limited to transient individuals given the localised moderate exposure area (<10.3 km from the release site).
In-water hydrocarbons are mostly predicted to occur at low thresholds of dissolved and entrained (up to 94%), with low probabilities of moderate thresholds of dissolved (3%), and a few sites with high thresholds of entrained hydrocarbon exposure for the worst-case scenario modelled (RPS, 2023).</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>If whales are foraging at the time of the spill, potential exposure to moderate levels of surface hydrocarbons is expected to be limited to transient individuals given the localised moderate exposure area.
As cetaceans’ surface to breathe the inhalation of hydrocarbon droplets, vapours and fumes at the surface is a distinct possibility (Helm et al. 2014). Inhalation of surface hydrocarbons</td><td>Several cetacean species may be exposed to moderate dissolved or high entrained exposure (in the upper 0 -10 m of the water column) which thresholds in the water column following a hydrocarbon release.
In-water hydrocarbons are mostly predicted to occur at low thresholds of dissolved and entrained (100%), with low probabilities of moderate thresholds of dissolved, and a few</td><td>Given cetaceans are pelagic species, exposure to shoreline hydrocarbons is not expected.</td></tr>
</table>

Impact and Risk Evaluation		
could damage mucous membranes, damage airways, or even cause death. Furthermore, ingestion of contaminated prey could cause toxic impacts. The risk is greatest near the source of a fresh spill because volatile toxic vapours disperse relatively quickly (Helm et al. 2014). Direct surface oil contact with hydrocarbons is considered to have little deleterious effect on cetaceans, and any effect is likely to be minor and temporary. The skin is an effective barrier to toxicity (Geraci & St Aubin 1988). Hydrocarbons tend to adhere to rough surfaces, hair, or calluses of animals. Cetaceans have mostly smooth skin, with limited rough surfaces, so contact with hydrocarbons by cetaceans is expected to cause only minor hydrocarbon adherence. Studies have shown that hydrocarbon are not expected to accumulate in or around the eyes, mouth, blow hole, or other potentially sensitive external areas (Helm et al. 2014). Insulation is provided by a layer of blubber rather than hair or fur, so it is unlikely oil would compromise the thermoregulatory system of cetaceans. Individual southern right whales found within the aggregation BIA may have a higher likelihood of exposure to hydrocarbons compared to the transient individuals found exposed within the migration BIA. However, only a comparatively small area of the reproduction BIA is predicted to be overlapped by the EMBA (LOWC) (RPS 2024). Given, the hydrocarbon is a light and non-persistent one; and the BIA being relatively far from the release site, indicates that majority of the hydrocarbon volume will have undergone weathering, as predicted within Section 6.8.3.3. Physical contact by individual whales of hydrocarbon is unlikely to lead to any long-term impacts. Given the mobility of whales, only a small proportion of the population would surface in the	sites with high thresholds of entrained for the worst-case scenario modelled. Cetacean exposure to entrained hydrocarbons can result in physical coating as well as ingestion (Geraci and St Aubin, 1988). Such impacts are associated with 'fresh' hydrocarbons, the risk of impact declines rapidly as the condensate weathers. Geraci and St Aubin (1988) found little evidence of cetacean mortality from hydrocarbon spills; however, some behaviour disturbance (including avoidance of the area) may occur. While this reduces the potential for physiological impacts from contact with hydrocarbons, active avoidance of an area may disrupt behaviours such as migration, or displace individuals from important habitat, such as foraging, resting or breeding. However, the strong attraction to specific areas for breeding or feeding (e.g. use of the Warrnambool coastline as a nursery area for southern right whales) may override any tendency for cetaceans to avoid the noxious presence of hydrocarbons. The potential for environmental impacts would be limited to a relatively short period following the release and would need to coincide with a migration event to result in exposure to a large number of individuals. However, such exposure is not anticipated to result in long-term impacts to population viability.	

Impact and Risk Evaluation		
affected areas, resulting in short-term and localised consequences, with no long-term population viability effect.		

Summary:

As highly mobile animals, in general it is very unlikely that cetaceans will be constantly exposed to concentrations of hydrocarbons in the water column for continuous durations that would lead to chronic toxicity effects.

The National Recovery Plan for the Southern Right Whale (DCCEEW 2024b) details that oil spills have the potential to have the greatest impact on southern right whales within or near reproduction BIAs, when there are larger concentrations of whales engaged in breeding activities over sustained periods of time (i.e., weeks to months) and where oil may accumulate.

It is acknowledged that low levels of surface hydrocarbons may occur within the southern right whale reproduction BIA. However, given the condensate is considered a light hydrocarbon that rapidly evaporates, the number of cetaceans exposed within the reproduction BIA by the time the hydrocarbon is present is expected to be low, with population impacts not anticipated, is unlikely to lead to long-term impacts or result in viable long-term population effects.

The potential consequence to cetaceans is assessed as **Level 3** based on the potential for localised, medium-term impacts to species of recognised conservation value but not affecting local ecosystem functioning.

Inherent Likelihood

Historical LOWC incidents events during development drilling have been reported at a frequency for a gas well of 4.2 x 10^{-5} per drilled well (IOGP 2019). This represents the frequency of the cause (i.e. a LOWC); additional environmental factors would be necessary for the worst-case consequences to marine fauna to eventuate.

Due to the nature of this activity, the multiple control measures that will be in place, and based on previous occurrences, the impact is considered conceivable and could occur, however, it would require a rare combination of factors. Therefore, the inherent likelihood of an accidental release of condensate causing Level 3 consequences to habitats is considered **Unlikely (D)**.

Inherent Risk Severity

The inherent risk severity of an accidental release of condensate causing impacts to marine fauna is considered **Moderate**. Table 6-58 lists the inherent risk severity for each receptor type.

Table 6-58: Inherent Risk Severity – Condensate Exposure – Ecological Receptors – Marine Fauna

Receptor	Inherent Consequence Level	Inherent Likelihood Level	Inherent Severity
Plankton	2	D	Low
Benthic invertebrates	2	D	Low
Fish and sharks	2	D	Low
Avifauna	3	D	Moderate
Marine reptiles	2	D	Low
Pinnipeds	3	D	Moderate
Cetaceans	3	D	Moderate

6.8.5.4 Risk: Change in Ecosystem Dynamics

Inherent Consequence Evaluation

Impacts to social receptors, such as sensitive ecosystems, are assessed based on the hydrocarbon exposure threshold that could result in a visual sheen or exceedance of water quality guidelines and are considered an indicator of possible Socio-Economic impacts (SEI) within the marine and coastal environment. The potential extent of these thresholds is determined by modelling (Figure 6-16 and Figure 6-17).

Exposure concentrations are not uniform to the outer extent of these thresholds. Concentrations would typically be lower, and the chance of exposure more remote beyond the ecological EMBA.

The thresholds that apply to the outer extent of potential visual/water quality impacts are:

- surface (low)
- shoreline (low)
- in water – dissolved (moderate)
- in water – entrained (high).

Potential impacts to social receptors are assessed in Table 6-59.

The EPBC Protected Matters Reports relevant to the hydrocarbon spill thresholds are in Appendix 5 - .

Table 6-59: Consequence Evaluation for Hydrocarbon Exposure – Social Receptors – Natural Systems

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="3">Australian Marine Parks (AMPs)</td></tr>
<tr><td colspan="3">Exposure Evaluation</td></tr>
<tr><td colspan="2">Condensate</td><td>MDO</td></tr>
<tr><td colspan="2">Modelling of the condensate LOWC spill scenario predicted one AMP to be within the range of hydrocarbon exposures relevant to socio-economic impacts, including:
• Apollo AMP (Multiple Use Zone (IUCN VI).
LOWC spill modelling indicates that 6% of the Apollo AMP may be exposed to hydrocarbons at relevant in-water (entrained) thresholds (RPS 2024).
See Section 4.4.3 for the major conservation values of this AMP.</td><td>Modelling of the MDO spill scenario predicted one AMP to be within the range of hydrocarbon exposures relevant to socio-economic impacts, including:
• Apollo AMP (Multiple Use Zone (IUCN VI).
MDO spill modelling indicates that 25% of the Apollo AMP may be exposed to hydrocarbons only at relevant in-water (entrained) thresholds (RPS 2023).
See Section 4.4.3 for the major conservation values of this AMP.</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>The modelling did not predict contact by surface hydrocarbons for Apollo AMP, at or above the low threshold. However, values identified with the AMP may have the potential to be impacted by surface hydrocarbons at the relevant thresholds outside of the AMP.
Seabirds are the value which has been identified for this AMP that may be impacted by surface hydrocarbons by rafting, resting, diving or feeding within the surface slick. Impact to seabirds from direct or indirect exposure to surface hydrocarbons may cause a subsequent negative impact to the value of the AMP, however any impact is expected to be limited to a small number of individuals, with no impacts to regional populations.</td><td>The exposure of entrained hydrocarbons will be greatest within the upper 0-10 m of the water column and areas close to the spill source. The Apollo AMP is located within waters 80-120 m, respectively; therefore, conservation values within the AMP, such as ecosystems, habitats and sea-floor features are not predicted to be impacted.
The Apollo AMP is important foraging areas for seabirds. There is a low probability that seabirds will be exclusively feeding within the area exposed to hydrocarbons given their extensive foraging grounds. Therefore, there is a chance that foraging seabirds will experience sub-lethal impacts from consuming contaminated prey, however, impacts will be limited to individuals and are not expected to cause impacts at a population-level.</td><td>Given the AMP is located in Commonwealth waters, exposure to shoreline hydrocarbons is not expected.</td></tr>
</table>

Impact and Risk Evaluation		
	The Apollo AMP also provides important migratory pathways for cetaceans (i.e. humpback, blue, fin, and sei whales). However, as cetaceans are highly mobile pelagic species, they are unlikely to be exposed to discrete patches of hydrocarbons for long.	

Summary:
The potential consequence to Australian Marine Parks from exposure are assessed as **Level 3** based on the potential for localised, medium-term impacts to habitats or species of recognised conservation value or to local ecosystem functioning.

Refer also to:

- Ecological Receptors - Marine fauna

State Marine Parks and Reserves

Exposure Evaluation

Condensate	**MDO**
The modelling of the condensate LOWC spill scenario identified one State Park and reserve that may be present within the range of hydrocarbon exposures relevant to socio-economic impacts, including: • Twelve Apostle Marine National Park The Twelve Apostles Marine National Park was the only State Protected Area that was identified to also be exposed to in-water (high threshold) for entrained hydrocarbons and surface (low threshold) hydrocarbons. Values associated with this State Protected Area include habitats (i.e. reefs, limestone formation, and kelp beds) for a diverse range of invertebrates, fish, mammals and seabirds. Given the hydrocarbon characteristics of the condensate, being a volatile and light non-persistent hydrocarbon with approximately 17.5% residual, including 10% wax content, majority of the volatile ends will evaporate rapidly (RPS 2024). Therefore, in the unlikely event that hydrocarbons were to reach shorelines predicted below relevant thresholds, hydrocarbon sheens would not be expected, instead isolated patches of highly weathered waxy flakes may occur.	The modelling of the MDO spill scenario identified 4 State Protected Areas that may be present within the extent of hydrocarbon exposures at socio-economic thresholds for shoreline accumulation. These include: • Twelve Apostle Marine National Park • The Arches Marine Sanctuary • Discovery Bay Marine National Park • Marengo Reefs Marine Sanctuary. The Twelve Apostles Marine National Park was the only State Protected Area that was identified to also be exposed to in-water (moderate threshold) and surface (low threshold) hydrocarbons. MDO spill modelling indicates that 1% and 65%of the of the Twelve Apostles Marine National Park may be exposed to hydrocarbons at relevant in-water dissolved and entrained thresholds, respectively (RPS 2023).

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="2">See Section 4.4.3 for the major conservation values of these Marine Parks and Reserves.</td><td>Conservation values for this protected area include high levels of marine fauna and flora diversity, including fish and invertebrate assemblages and benthic coverage (sponges, soft corals, macroalgae).
See Section 4.4.3 for the major conservation values of these Marine Parks and Reserves.</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>The values identified within the identified State marine protected areas that have the potential to be exposed to surface hydrocarbons at, or above, the low threshold.
Impacts to the values of the marine park (i.e. seabirds) may cause subsequent negative impacts to the value of the marine park.
Furthermore, visible surface hydrocarbons (i.e. a rainbow sheen) may have the potential to reduce the visual amenity of the area, also impacting the value.
However, given the nature of the hydrocarbon, being light non-persistent hydrocarbon, it is expected to remain in waxy flake-like state; and in most cases surface oiling is not expected to the visible from shore.</td><td>The exposure of entrained hydrocarbons will be greatest within the upper 0-10 m of the water column and areas close to the spill source. Therefore, conservation values within these state parks and reserves, such as benthic and pelagic species, ecosystems, habitats and sea-floor features are not predicted to be exposed to in-water hydrocarbons and therefore not predicted to be impacted.</td><td>Visible shoreline hydrocarbons have the potential to reduce the visual amenity of the area for tourism and discourage recreational activities within the identified protected areas.
Given the non-persistent nature of the hydrocarbon, waves and tidal action are anticipated to continue the weathering process in the event that shoreline contact occurs. Any residual components of the oil will resolidify to waxy particles, decreasing the risk of exposure and potential for heavy coating of the shorelines.
Majority of the coastlines that may be exposed to shoreline hydrocarbon accumulation are relatively unpopulated.
Therefore, given the nature of the hydrocarbon, anticipated weathering processes, impacts are not anticipated to be long-term.</td></tr>
<tr><td colspan="3">Summary:
The potential consequence to State parks and reserves from exposure are assessed as Level 3 based on the potential for localised medium-term impacts to habitats or species of recognised conservation value or to local ecosystem functioning.
Refer also to:
• Ecological Receptors - Marine fauna.</td></tr>
<tr><td colspan="3">Wetlands</td></tr>
</table>

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="3">Exposure Evaluation</td></tr>
<tr><td colspan="2">Condensate</td><td>MDO</td></tr>
<tr><td colspan="2">Modelling of the condensate LOWC spill scenario predicted five internationally important wetlands (Ramsar) could be present within the extent of hydrocarbon exposures at socio-economic thresholds for shoreline accumulation, including:
Port Phillip Bay (Western Shoreline) and Bellarine Peninsula
Western Port
Corner Inlet
Piccaninnie Ponds Karst Wetlands
Glenelg Estuary and Discovery Bay Wetlands.
A number of additional wetlands of national importance are also identified as having the potential to be exposed to hydrocarbon thresholds for socio-economic impacts within the wider Monitoring Area (see Section 4).
See Section 4.4.3 for further details on these wetlands.</td><td>There are no wetlands of International Importance (Ramsar) identified that have the potential to be exposed to hydrocarbon thresholds for socio-economic impacts.
The condensate LOWC spill scenario has been identified as the worst-case scenario for this activity. Therefore, the consequence evaluation is based on the worst-case area of exposure; the EMBA (LOWC).</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>Given wetlands are located onshore, exposure to surface (floating) hydrocarbons is not expected.</td><td>Given wetlands are located onshore, exposure to in-water hydrocarbons is not expected.</td><td>Wetlands, including internationally important Ramsar wetlands, are saline marsh areas and estuarine environments that are a continuation from the marine environment. Therefore, the impacts of hydrocarbons on wetlands are generally similar to those described for mangroves and saltmarshes. Depending on where the shoreline contact occurs there is a potential for shoreline oil to move into the estuary and wetlands, potentially impacting the aesthetic and ecological value of the wetland. The degree of direct impact of oil on wetland vegetation are variable and complex, and can</td></tr>
</table>

Impact and Risk Evaluation		
		be both acute and chronic, ranging from short-term disruption of plant functioning to mortality. Spills reaching wetlands during the growing season will have a more severe impact than if oil reaches wetlands during the times when many plant species are dormant. Furthermore, shoreline hydrocarbon exposure at, or above, the low threshold may impact the key receptors of wetlands (e.g. waterbirds, fish and invertebrates) which may cause a subsequent negative impact to the value of the wetland, however, is expected to be limited to a small number of individuals, with no impacts to regional populations.
Summary: The potential consequence to wetlands from exposure are assessed as **Level 3** based on the potential for localised medium-term impacts to species or habitats of recognised conservation value or to local ecosystem function. Refer also to: • Ecological Receptors - Marine fauna		
Key Ecological Features (KEFs)		
Exposure Evaluation		
Condensate		**MDO**
Modelling of the LOWC spill scenario predicted exposure from in-water hydrocarbons at, or above low exposure levels, to overlap five KEFs, these include: • Bonney Coast Upwelling • Canyons on the Eastern Continental Shelf • Shelf rocky reefs • Upwelling East of Eden • West Tasmania Canyons. These KEFs are all associated with unique sea-floor features of ecological significance (and important habitat forming species, such as sponges, attached megafauna, and		Modelling predicted exposure from in-water hydrocarbons at, or above low exposure levels, to overlap two KEFs, these include: • Bonney Coast Upwelling • Shelf rock reefs. See Section 4.4.3 for further details on these KEFs.

Impact and Risk Evaluation	
hard substrate formations which create a habitat for diverse species (see Section 4.4.3). The Bonney Coast Upwelling is also an area of high abundance of plankton, such as krill which acts as a food source to many seabirds, fish and cetacean species. Furthermore, seasonal upwelling events which brings cold nutrient rich waters to the sea surface within these KEFs contribute to the high productivity and biodiversity associated within these areas. Shelf Rocky Reefs are not a spatially defined KEF but is known to be well represented within the southeast marine region, on the continental shelf. The shelf rocky reefs KEF in particular supports a variety of benthic communities, such as coral, sponges and benthic communities, along the continental shelf within the temperate east marine region (see Section 4.4.3). See Section 4.4.3 for further details on these KEFs.	

Consequence Evaluation

Surface Exposure	In-water Exposure	Shoreline Exposure
Given the values identified for each KEF that may be exposed to hydrocarbons are pelagic or benthic, exposure to surface (floating) hydrocarbons is not expected.	The values identified within these KEFs have the potential to be exposed to entrained hydrocarbons at, or above, the low threshold. However, the exposure of entrained hydrocarbons will be greatest within the upper 0-10 m of the water column and areas close to the spill source. Therefore, the spill is unlikely to intersect with majority of the values of the KEFs which are concentrated within the water column >10 m deep or along the seafloor at varying water depths. Hydrocarbon exposure to the key receptors of the KEFs (e.g. seabirds, pinnipeds and cetaceans) may cause a subsequent negative impact to the value of the KEFs, however is expected to be limited to a small number of individuals, with no impacts to regional populations.	Given the identified KEFs are all located in offshore waters, exposure to shoreline hydrocarbons is not expected.

Impact and Risk Evaluation		
	The Bonney Coast Upwelling is also an area of high abundance of plankton, such as krill which acts as a food source to many seabirds, fish and cetacean species. Plankton populations may be impacted by hydrocarbon exposure, however, would be expected to be limited to a small proportion of the productivity driven by the Bonney upwelling, with no impacts to the overall system and productivity across the region. The modelling predicted only a small portion of the Bonney Coast Upwelling (approximately 8%) to be overlapped by the hydrocarbon thresholds relevant to potential socio-economic impacts. Therefore, any impacts are anticipated to localised and not impact the overall value of the KEF. Furthermore, given light non-persistent nature of the hydrocarbon, any impacts to KEFs are expected to be localised and short-term.	
Summary: The potential consequence to KEFs is assessed as **Level 3** based on the potential for localised, medium-term impacts to habitats or species of recognised conservation value or to local ecosystem functioning. Refer also to: • Ecological Receptors - Marine fauna.		
Threatened Environmental Communities (TECs)		
Exposure Evaluation		
Condensate	**MDO**	
Modelling of the condensate LOWC spill scenario predicted exposure from shoreline hydrocarbons at, or above low exposure levels, to overlap 10 TECs. All 10 TEC'S have shoreline exposure, these include: • Giant Kelp Marine Forests of South East Australia (Endangered)	Modelling of the MDO spill scenario predicted the exposure of hydrocarbon exposures at socio-economic thresholds to overlap several TECs, those with marine or shoreline features include: • Giant Kelp Marine Forests of South East Australia	

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="2">• Subtropical and Temperate Coastal Saltmarsh (Vulnerable)
• Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community (Endangered)
• Natural Damp Grassland of the Victorian Coastal Plains (Critically Endangered)
• Karst springs and associated alkaline fens of the Naracoorte coastal plain bioregion
• Grassy Eucalypt Woodland of the Victorian Volcanic Plain (Critically Endangered)
• White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered)
• Natural Temperate Grassland of the Victorian Volcanic Plain (Critically Endangered)
• Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana) (Critically Endangered)
• Tasmanian white gum (Eucalyptus viminalis) wet forest (Critically Endangered).
Values associated with these TECs (see Section 4.4.3) are listed as critically endangered, endangered or vulnerable, and can be sensitive to hydrocarbon exposure.</td><td>• Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community (Endangered)
• Subtropical and Temperate Coastal Saltmarsh (Vulnerable)
• Natural Damp Grassland of the Victorian Coastal Plains (Critically Endangered).
The condensate LOWC spill scenario has been identified as the worst-case scenario for this activity. Therefore, the consequence evaluation is based on the worst-case area of exposure; the EMBA (LOWC).</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>Given the identified TECs are all located onshore or in coastal intertidal waters, exposure to surface (floating) hydrocarbons is not expected.</td><td>Given the identified TECs are all located onshore or in coastal intertidal waters, exposure to in-water hydrocarbons is not expected.</td><td>TECs have the potential to be exposed to shoreline hydrocarbons at, or above, the low threshold. Any hydrocarbon exposure to the key receptors of the TECs may cause a subsequent negative impact to the value of the TECs, However, potential impacts to socio-economic receptors (tourism, cultural and/or other social values associated with the TECs) are more likely to occur as a result of a reduction in the visual amenity, rather than ecological impacts of hydrocarbon exposure at low threshold.</td></tr>
</table>

Impact and Risk Evaluation		
		Shoreline hydrocarbons often become concentrated as it strands ashore. However, most of the oil is concentrated along the high tide mark while the lower/upper parts are often untouched (IPIECA, 1995). The majority of the TECs are located above the high tide mark, therefore, impacts are not anticipated to occur. Furthermore, given light non-persistent nature of the hydrocarbon, any impacts to TECs are expected to be localised and short-term.
Summary: Given the rapid weathering and non-persistent nature of the condensate, the potential consequence to TECs is assessed as **Level 2** based on the potential for localised short-term impacts to species of recognised conservation value not affecting local ecosystem function.		
Heritage Places		
Exposure Evaluation		
Condensate	**MDO**	
Modelling of the LOWC spill scenario predicted that only one heritage area could be within the extent of hydrocarbon exposures at socio-economic thresholds (RPS 2024). These include: • Great Ocean Road and Scenic Environment • Point Nepean Defence Sites and Quarantine Station Area. No World Heritage Places were identified as having the potential to be exposed to hydrocarbon exposures at socio-economic thresholds within the potential exposure area for condensate LOWC (RPS 2024).	Modelling of the MDO spill scenario predicted that only one National heritage area could be within the range of hydrocarbon exposures relevant to socio-economic impacts, and no World heritage areas (RPS 2023): • Great Ocean Road and Scenic Environment. The condensate LOWC spill scenario has been identified as the worst-case scenario for this activity. Therefore, the consequence evaluation is based on the worst-case area of exposure; the EMBA (LOWC).	
Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Identified offshore heritage places are located on benthic substrate, and therefore exposure to surface (floating) hydrocarbons is not expected.	Historical shipwrecks (see 4.4.3) have the potential to be impacted by in-water hydrocarbons above the high	These heritage places have the potential to be exposed to shoreline hydrocarbons at, or above, the low threshold.

Impact and Risk Evaluation		
The Great Ocean Road and Scenic Environments has been identified as an onshore heritage place located ~25 km from the operational area. An unplanned spill may have the potential to impact on the aesthetic and scenic landscape values of the Great Ocean Road and Scenic Environs if a sheen is visible. Modelling predicts that in the unlikely event of a spill, highest concentrations of surface oil would tend to occur offshore, and that high proportions of the hydrocarbons would evaporate and disperse within the water column within a short time of being spilled. Traces of hydrocarbons could be visible in the near term (for days or weeks) following a spill.	threshold, despite there being limited information on the effect of oil spills on historic shipwrecks. Laboratory studies conducted with 5 mg/l (5000 ppb) of crude oil have shown that crude oil and potentially chemical dispersant could impact the biodiversity and metabolic function of microbial biofilms colonising metal-hulled shipwrecks (Salerno et al. 2018). This could have downstream effects on corrosion rates of metal hulls, potentially impacting their longevity in the marine environment.	Visible shoreline hydrocarbons may have the potential to reduce the visual amenity of the area, subsequently impacting the value of the heritage areas. Any impact to the environmental values of the areas (i.e. the environment of the Great Ocean Road and Scenic Environments and Deen Maar) may affect ecological values of the heritage areas. See Section 8 for further assessment of changes to First Nations cultural heritage values and sensitivities. However, the modelling predicted rapid evaporation during the first 24 hours following the hydrocarbon release, depending on the weather conditions (i.e. wind speeds). Given the non-persistent nature of the hydrocarbon, waves and tidal action are anticipated to continue the weathering process in the event that shoreline contact occurs.
Summary: Given the rapid weathering and non-persistent nature of the condensate, the potential consequence to heritage places is assessed as **Level 2** based on the potential for localised short-term impacts. Refer also to: • Ecological Receptors - Benthic Habitats • Ecological Receptors - Marine Fauna • Social Receptors – Human Systems (Recreation and Tourism) • Section 8.0: Changes to First Nations Cultural Heritage Values and Sensitivities.		

Inherent Likelihood

Historical LOWC incidents events during development drilling have been reported at a frequency for a gas well of 4.2 x 10^{-5} per drilled well (IOGP 2019). This represents the frequency of the cause (i.e. a LOWC); additional environmental factors would be necessary for the worst-case consequences to natural systems to eventuate.

Due to the nature of this activity, the multiple control measures that will be in place, and based on previous occurrences, the impact is considered conceivable and could occur, however, it would require a rare combination of factors. Therefore, the inherent likelihood of an accidental release of condensate causing Level 3 consequences to habitats is considered **Unlikely (D)**.

Inherent Risk Severity

The inherent risk severity of an accidental release of condensate causing impacts to social receptors is considered **Moderate**. Table 6-60 lists the inherent risk severity for each receptor type.

Table 6-60: Inherent Risk Severity – Condensate Exposure – Social Receptors – Natural Systems

Receptor	Inherent Consequence Level	Inherent Likelihood Level	Inherent Severity
AMPs	3	D	Moderate
State Parks and Reserves	3	D	Moderate
Wetlands	3	D	Moderate
KEFs	3	D	Moderate
TECs	2	D	Low
Heritage Places	2	D	Low

6.8.5.5 Risk: Change to the Functions, Interests, or Activities of Other Users

Inherent Consequence Evaluation

Impacts to social receptors, such as other marine users, are assessed based on the hydrocarbon exposure threshold that could result in a visual sheen or exceedance of water quality guidelines and are considered an indicator of possible Socio-Economic (SE) impacts within the marine and coastal environment. The potential extent of these thresholds is determined by modelling (Figure 6-16 and Figure 6-17).

Exposure concentrations are not uniform to the outer extent of these thresholds. Concentrations would typically be lower, and the chance of exposure more remote beyond the ecological EMBA.

The thresholds that apply to the outer extent of potential visual/water quality impacts are:

- surface (low)
- shoreline (low)
- in water – dissolved (moderate)
- in water – entrained (high).

Potential impacts to social receptors are assessed in Table 6-60.

The EPBC Protected Matters Reports relevant to the hydrocarbon spill thresholds are in Appendix 5 - .

Table 6-61: Consequence Evaluation for Hydrocarbon Exposure – Social Receptors – Human Systems

Impact and Risk Evaluation	
Coastal Settlements	
Exposure Evaluation	
Condensate	**MDO**
Several local government areas along the Victorian coastline are identified as having the potential to be exposed to hydrocarbons at low threshold; predominantly between Yambuk and east of Cape Otway, where there is also potential for increased concentrations of hydrocarbons at levels that could have ecological impacts. The scenarios modelled predicted shoreline exposure could occur at the low threshold at 28 local government areas (RPS 2024), including: • Anser Island • Colac Otway • Corangamite • East Gippsland • Glenelg • Greater Geelong • Kanowna Island • King Island • Lady Julia Percy Island • Mornington Peninsula • Moyne • Phillip Island • Rodondo Island • South Gippsland • Warrnambool. The stretch of coastlines where the outer extent of hydrocarbons could reach at the low shoreline exposure threshold have low coastal development and settlement. Within the	There are several local government areas identified as potentially being overlapped by the spatial extent of shoreline hydrocarbon exposure at the low threshold. The scenarios modelled predicted shoreline exposure could occur at the low threshold at 5 local government areas, including: • Colac Otway • Corangamite • Glenelg • Mornington Peninsula • Moyne. The condensate LOWC spill scenario has been identified as the worst-case scenario for this activity. Therefore, the consequence evaluation is based on the worst-case area of exposure; the EMBA (LOWC).

Impact and Risk Evaluation		
range of potential ecological impacts, indicative of more severe socio-economic impacts, are areas where there is relatively high development, including Port Campbell and Warrnambool (Section 4.4.3).		
Consequence Evaluation		
Surface Exposure	In-water Exposure	Shoreline Exposure
Given these coastal settlements occur on the shoreline, exposure to surface (floating) hydrocarbons is not expected.	Given these coastal settlements occur on the shoreline, exposure to in-water hydrocarbons is not expected.	Visible hydrocarbons have the potential to reduce the visual amenity of the area for coastal settlements. Coastal settlements are within the area potentially exposed to hydrocarbons ashore; however, the stretch of coast to be exposed is not densely populated. Noting that these events will be temporary, so duration of exposure is also limited. Most of the hydrocarbons will be concentrated along the high tide mark while the lower/upper parts are often untouched (IPIECA 1995) and expected to be visible.
Summary: Given its rapid weathering and potential for tidal flushing and rapid degradation, the potential consequence to coastal settlements is assessed as **Level 2** based on the potential for localised short-term impacts.		
Recreation and Tourism		
Exposure Evaluation		
Condensate	**MDO**	
The Victorian coast and marine region provide a diverse range of land-based and near-shore tourism opportunities, including surfing, fishing, sight-seeing, diving and snorkelling (Section 4.4.3). Modelling of the LOWC spill scenario predicted shoreline hydrocarbon exposure at, or above the low (10 g/m^2) threshold predominantly between Yambuk and east of Cape Otway along the Victorian coastline (RPS 2024).	Recreation and tourism activities may be present within the area exposed to MDO hydrocarbons in the event of a spill. Modelling of the MDO spill scenario predicted low exposure thresholds of surface hydrocarbons are predicted up to 32.5 km (west) of the release location. Areas where low threshold surface hydrocarbon is predicted include Twelve Apostle MNP, Corangamite, and Moonlight Head.	

Impact and Risk Evaluation		
Surface hydrocarbon exposure at, or above the low threshold (1 g/m^2) was only predicted for offshore and nearshore waters, along the Peterborough to Princetown coast sections. In general, recreational and tourism activities are generally restricted to shallow coastal waters and shorelines.		
Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Visible surface hydrocarbons (i.e. a rainbow sheen) on the surface have the potential to reduce the visual amenity of the area for tourism and discourage recreational activities. However, given the nature of the condensate, being light non-persistent hydrocarbon, it is expected to remain in waxy flake-like state; and in most cases surface oiling is not expected to the visible from shore.	In-water exposure to entrained condensate could overlap and may result in a negative impact to recreation and tourism activities. Tourism and recreation activities can be indirectly exposed to impacts from in-water hydrocarbons, as the activities are often linked to the presence of ecological features, such as marine fauna (e.g. whale watching, recreational fishing). Any impact to receptors that provide nature-based tourism features (e.g. whales) may cause a subsequent negative impact to recreation and tourism activities.	Visible hydrocarbons stranded on shorelines have the potential to reduce the aesthetic value for tourism and discourage recreational activities that may be operating within the area. Precautionary exclusion from shorelines may be implemented by local governments until water quality monitoring verifies the absence of residual hydrocarbons. This could cause disruption to some recreational and tourism activities within that area. Given the nature of the condensate, being light non-persistent hydrocarbon, it is expected to remain in waxy flake-like state; and in most cases surface oiling is not expected to the visible from shore. On shorelines, the wave and tidal action, together with predicted weathering, indicates that hydrocarbons along shorelines will continually wash off the substrates, and be readily flushed into the water, leading to further weathering.
Summary: Given condensates rapid weathering and potential for tidal flushing and rapid degradation, the potential consequence to recreational and tourism is assessed as **Level 2** based on the potential for localised short-term impacts. Refer also to: • Ecological Receptors - Habitats Ecological Receptors - Marine Fauna.		

<table>
<tr><td colspan="3">Impact and Risk Evaluation</td></tr>
<tr><td colspan="3">Commercial Fisheries</td></tr>
<tr><td colspan="3">Exposure Evaluation</td></tr>
<tr><td colspan="2">Condensate</td><td>MDO</td></tr>
<tr><td colspan="2">Several commercial and state fisheries have the potential to be exposure to hydrocarbons at socio-economic impact thresholds. These include:
9 Commercial Fisheries
8 Victorian State Fisheries
5 Tasmanian State Fisheries
3 South Australia State Fisheries
9 NSW State Fisheries.
For Tasmania, only the shoreline of King Island has the potential to be exposed to hydrocarbon accumulation on the shoreline, and only at low thresholds, not having the potential for ecological impacts. No exposure to in-water hydrocarbons were predicted for this location (RPS 2024).

The shallow waters of King Island are where seaweed collectors harvest bull kelp. Therefore, the potential impact to this State fishery has been assessed below.</td><td>Several commercial and state fisheries have the potential to be exposed to hydrocarbons at socio-economic impact thresholds.

The condensate LOWC spill scenario has been identified as the worst-case scenario for this activity. Therefore, the consequence evaluation is based on the worst-case area of exposure; the EMBA (LOWC).</td></tr>
<tr><td colspan="3">Consequence Evaluation</td></tr>
<tr><td>Surface Exposure</td><td>In-water Exposure</td><td>Shoreline Exposure</td></tr>
<tr><td>Visible surface hydrocarbons (i.e. a rainbow sheen) may have the potential to affect public perception of the industry, potentially causing a negative economic impact.

Physical displacement of commercial fishers has the potential to occur due to the establishment of exclusion zones during a spill response. However, due to the nature of the condensate, being a light non-persistent hydrocarbon, with high anticipated evaporation and</td><td>In-water exposure to entrained hydrocarbons may result in a reduction in commercially targeted marine species, resulting in impacts to commercial fishing and aquaculture. Actual or potential contamination of seafood can affect commercial and recreational fishing and can impact seafood markets long after any actual risk to seafood from a spill has subsided (NOAA 2002) which can have economic impacts to the industry.</td><td>There was one fishery identified that has the potential to be impacted by exposure to (low) shoreline hydrocarbons; the Tasmanian State bull kelp industry located within the shallow waters of King Island.

Hydrocarbon smothering has the potential to cause fouling and asphyxiation (Blumer 1971; Cintron et al. 1981) and act as a physical barrier for the diffusion of CO2 across cell walls to macroalgae (O'Brien & Dixon 1976). Any impacts to commercially valuable seaweed</td></tr>
</table>

Impact and Risk Evaluation		
entrainment rates, exclusion zones are not expected to be long-term and are unlikely to result in significant impacts.	In-water exposure is limited to the upper 0 – 10 m of the water column, and not within the deeper areas of the water column where rock lobster and giant crab species are found. Due to the sensitivity, a small number of juvenile fish, larvae, and planktonic organisms, could be impacted, however impacts are not expected to affect population viability or recruitment.	have to potential to result in a negative economic impact to the industry. However, as the modelling predicted no exposure of the area to in-water or surface hydrocarbons, where majority of the fishery is located, the nearshore operators are unlikely to be impacted. Only the shoreline harvesters, could be affected by short-term closures but would be expected to recover relatively rapidly, with no long-term or irreversible damage given the potential concentrations of hydrocarbons that could reach King Island are below those that could cause ecological impacts.
Summary: In-water exposure is limited to the upper 0 – 10 m of the water column, and not within the deeper areas of the water column where rock lobster and giant crab species are found. Any acute impacts are expected to be limited to individuals and not expected to cause impacts at a population level. The potential consequence to commercial fisheries is assessed as **Level 2** based on the potential for localised, short-term impacts. Refer also to: • Ecological Receptors -Marine Fauna		
Other Offshore Industry		
Exposure Evaluation		
Condensate		**MDO**
Other offshore industry, such as shipping, petroleum exploration and production, other offshore infrastructure and defence activities, could be exposed to hydrocarbons according to modelling of the LOWC spill scenario. The South-east Marine Region in general is one of the busiest shipping regions in Australia, which encompasses the Otway Basin. A number of producing oil and gas wells occur within the Monitoring Area. Current operators with producing fields in the Otway Basin include Beach Energy (Otway Gas Field Development) and Amplitude Energy (CHN Development).		Other offshore industry, such as shipping, petroleum exploration and production, other offshore infrastructure and defence activities, could be exposed to hydrocarbons according to modelling of the MDO spill scenario (Section 4.4.3). The potential exposure area for MDO is located entirely within the potential exposure area for condensate LOWC (RPS 2023), therefore, the consequence evaluation for the LOWC spill scenario is considered to be conservative and inclusive of the MDO spill scenario.

Impact and Risk Evaluation		
Numerous other petroleum exploration activities, including seismic surveys and exploration drilling, have been undertaken in the permits of the Otway Basin. Many of training areas, sea dumping sites and UXO sites have the potential to be exposed to low levels of hydrocarbons. A number of these sites are located in and around Port Phillip Bay and Western Port Bay.		
Consequence Evaluation		
Surface Exposure	**In-water Exposure**	**Shoreline Exposure**
Physical displacement of other offshore industry may occur due to the establishment of exclusion zones during the spill response. This has the potential to cause negative economic impact. However, due to the light non-persistent nature of the hydrocarbon, with high anticipated evaporation and entrainment rates, exclusion zones are not expected to be long-term and are unlikely to result in significant impacts.	Given these industries are all located in offshore waters which utilise the sea surface vicinity, exposure to in-water hydrocarbons is not expected.	Given industries are all located in offshore waters, exposure to shoreline hydrocarbons is not expected.
Summary: The potential consequence to other offshore industry is assessed as **Level 2** based on the potential for localised, short-term impacts.		

Inherent Likelihood

Historical LOWC incidents events during development drilling have been reported at a frequency for a gas well of 4.2 x 10^{-5} per drilled well (IOGP 2019). This represents the frequency of the cause (i.e. a LOWC); additional environmental factors would be necessary for the worst-case consequences to human systems to eventuate.

Due to the nature of this activity, the multiple control measures that will be in place, and based on previous occurrences, the impact is considered conceivable and could occur, however, it would require a rare combination of factors. Therefore, the inherent likelihood of an accidental release of condensate causing Level 2 consequences to habitats is considered **Unlikely (D)**.

Inherent Risk Severity

The inherent risk severity of an accidental release of condensate causing impacts to social receptors is considered **Low**. Table 6-62 lists the inherent risk severity for each receptor type.

Table 6-62: Inherent Risk Severity – Condensate Exposure – Social Receptors – Human Systems

Receptor	Inherent Consequence Level	Inherent Likelihood Level	Inherent Severity
Coastal Settlements	2	D	Low
Recreation and Tourism	2	D	Low
Commercial Fisheries	2	D	Low
Other Offshore Industry	2	D	Low

6.8.6 Control Measures, ALARP, and Acceptability Assessment

Table 6-63 provides a summary of the control measures and ALARP and acceptability assessment relevant to worst case release scenarios.

Table 6-63: Accidental Hydrocarbon Release ALARP, Control Measures and Acceptability Assessment

Accidental hydrocarbon release	
ALARP Decision Context and Justification	ALARP Decision Context: Type B The activities proposed that could lead to Vessel LOC and a LOWC event are not new and have been undertaken by Amplitude Energy in the time since they become titleholder and operator. The wells are operated per the regulatory accepted WOMP and integrity management plan. The risks associated with Vessel LOC and LOWC are well understood; given the spatial and temporal scale of a worst-case discharge, and the sensitivities in the region, a worst-case scenario has the potential to result in Level 3 consequences. Consequently, Amplitude Energy believes that ALARP Decision Context B should be applied. However, from the outset of the planning phase, due to inherent complexity and some uncertainty associated with this aspect for this Activity, Context C has also been applied, and is reflected in: • The conservative assumptions used to characterise worst -case discharge scenarios for the LOWC. • Detailed assessment of potential impacts and risks. • Detailed assessment of control measures and selection of contingency measures in line with a precautionary approach.

Accidental hydrocarbon release	
	• Preparation of detailed response plans.
Control Measure	**Source and Description of Control**
Preventative	
CM01: Marine exclusion and caution zones	Exclusion zones are frequently installed over petroleum wells, structures and equipment established via Notice to Mariners around vessels undertaking petroleum activities. Temporary exclusion or caution zones are applied around vessels where they may be restricted in their manoeuvrability.
CM02: Pre-start Notifications	Under the Navigation Act 2014 (Cwth), the AHS are responsible for maintaining and disseminating hydrographic and other nautical information and nautical publications including: • Notices to Mariners • AUSCOAST warnings. Relevant details will be provided to the Joint Rescue Coordination Centre (JRCC) to enable AUSCOAST warnings to be disseminated.
CM03: Marine Assurance Process	Marine Assurance Process ensures that maintenance systems are in place ensure that safety-critical equipment is maintained in accordance with manufacturer specifications to enable optimal performance.
	The vessels and MODU will adhere to navigational safety requirements under the Navigation Act 2012 and associated Marine Orders, including but not limited to: • AMSA MO 21: Safety and emergency arrangements gives effect to SOLAS regulations dealing with life-saving appliances and arrangements, safety of navigation and special measures to enhance maritime safety. • AMSA MO 27 - Safety of Navigation and Radio Equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards • AMSA MO 30 - Prevention of collisions requires that onboard navigation, radar equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards. • AMSA MO 70 - Seafarer certification meets the requirements for qualifications and training.
	In accordance with MARPOL Annex I and AMSA MO 91 [Marine Pollution Prevention – oil], a Shipboard Marine Pollution Emergency Plan (SMPEP) or Shipboard Oil Pollution Emergency Plan (SOPEP) (according to class) is required to be To prepare for a spill event, the SMPEP/SOPEP details: • Response equipment available to control a spill event. • Review cycle to ensure that the SMPEP/SOPEP is kept up to date. • Testing requirements, including the frequency and nature of these tests. In the event of a spill, the SMPEP/SOPEP details: • Reporting requirements and a list of authorities to be contacted. Activities to be undertaken to control the discharge of hydrocarbon.
CM05: Ongoing Consultation	Notifications for any on-water activities and ongoing consultations undertaken per Section 11.0 - Consultation.
CM10: Amplitude Energy Offshore Chemical Assessment Procedure	All planned chemical discharges shall be assessed and deemed acceptable before discharge, in accordance with Amplitude Energy's Offshore Environment Chemical Assessment Process.

Accidental hydrocarbon release	
CM14: MODU Material Transfer Process	MODU will have a bulk fluid transfer process in place before commencing operations. This process will include: • MODU-to-vessel communication protocols. • Transfer hose integrity checks. • Transfer hose pressure test. • Continuous visual monitoring during transfers. • Tank volume monitoring. • Avoidance of bulk hydrocarbon transfers at night, or otherwise artificial illumination of the of the operational areas on the MODU, vessel and water between them during the transfer. • Weather limitations for bulk transfers.
CM15: Campaign Risk Review (modelling)	Spill modelling undertaken for both loss of MDO and LOWC to inform this EP and the spill response planning including SCERP, OPEP and OSMP.
CM22: NOPSEMA accepted WOMP	Under Part 5 of the OPGGS (Resource Management and Administration) Regulations 2011, an accepted WOMP is required before well activities can be undertaken. The WOMP details well barriers and the integrity testing that will be in place for the activity. The accepted WOMP (and its implementation) is therefore considered a key component of the environmental risk management for the campaign.
CM23: NOPSEMA accepted safety case	Under OPGGS (Safety) Regulations 2009 the following safety cases will be required for the campaign: • MODU facility safety case • Campaign Safety Case Revision. Each safety case will identify all hazards having the potential to result in major accident events (MAEs) associated with the respective facility. Safety cases therefore address major source control events associated with both the wells and the facilities (MODU) including surface and subsea well releases, and vessel collision. As part of MAE prevention and control, formal safety assessments are detailed and systematic assessment of the risk associated with each of those hazards, including the likelihood and consequences of each potential major accident event; and identifies the technical and other control measures that are necessary to reduce that risk to ALARP. The accepted safety cases (and their implementation) are therefore considered key components of the environmental risk management for the campaign.
Response	
CM24: Source Control Emergency Response Plan (SCERP)	A source control emergency response plan (SCERP) is developed for the activities. Where applicable to the campaign, the SCERP will address: • Arrangements for the provision of the Source Control IMT personnel (numbers, competency, capability for the duration of the response). • Arrangements for the provision of equipment and supplies. • Arrangements for equipment and personnel monitoring and tracking. • Activation and mobilisation plans, including activation and expenditure authority and regulatory approval processes. • Logistics plans and providers. • SIMOPS planning process.

Accidental hydrocarbon release	
	• Deployment and installation plans. • Well kill and shut-in plans.
CM25: Oil Pollution Emergency Plan (OPEP)	Under the Regulations, the petroleum activity must have an accepted Oil Pollution Emergency Plan (OPEP) in place before the activity commences. In the event of a LOWC, the OPEP will be implemented. The Offshore Victoria OPEP has been developed and provides for emergency response for scenarios described under this EP. By committing to implement this EP, Amplitude Energy acknowledges that any response will be implemented in accordance with the requirements described within the OPEP.
CM26: Operational and Scientific Monitoring Plan	Amplitude Energy's OSMP details the arrangements and capability in place for: • Operational monitoring of a hydrocarbon spill to inform response activities. • Scientific monitoring of environmental impacts of the spill and response activities. Operational monitoring will allow adequate information to be provided to aid decision making to ensure response activities are timely, safe, and appropriate. Scientific monitoring will identify if potential longer-term remediation activities may be required and potential breaches of protected places management objectives, specifically those of Australian Marine Parks.
Impact and Risk Summary	
Residual Impact Consequence	N/A
Residual Risk Consequence	**Level 3**: Localised medium-term impacts to species or habitats of recognized conservation value or to local ecosystem function; remedial/recovery work to land/water systems over months/year.
Likelihood	Based upon AMSA Annual Report 2023-24 (serious incident reports) (AMSA 2024), a LOC of MDO from a vessel is considered: • **Unlikely (D)** – As a rare combination of factors would be required for an occurrence; the event is conceivable and could occur at some time; and could occur during the activity. An assessment LOWC incidents was undertaken using SINTEF records (2013). This provided an indicative probability of a LOWC from well intervention or drilling that can be reasonably expected to occur, based on previous incidents. Statistics indicate the chances of the activity resulting in a LOWC are 1 × 10-4; this aligns to a likelihood rating D (Unlikely) under the Amplitude Energy risk matrix. The identified control measures to prevent a LOWC event include clear design and assurance standards, and consequently, it is considered: • **Unlikely (D)** - As a rare combination of factors would be required for an occurrence; the event is conceivable and could occur at some time; and could occur during the activity.
Residual Risk	**Moderate**
Demonstration of Acceptability	
Principles of ESD	The potential impact associated with this aspect is limited to a localised medium-term impact to species or habitats of recognized conservation value or to local ecosystem function; remedial, recovery work to land/water systems over months/year. The activities were evaluated as having the potential to result in a Level 3 consequence thus is not considered as having the potential to result in serious or

Accidental hydrocarbon release	
	irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required.
Legislative and Conventions	Legislation and other requirements considered relevant control measures include: • AMSA Marine Order 3 [Seagoing qualifications] • AMSA Marine Order 30 [Prevention of collisions] • AMSAs Marine Order 91 [Marine Pollution Prevention – oil] • OPGGS(E)R – Amplitude Energy Victorian OPEP (VIC-EPER-EMP-0001) • OPGGS(E)R- Amplitude Energy OSMP (VIC-ER-EMP-0002) • Navigation Act 2014 – Notifications.
Internal Content	The environmental controls proposed reflects Amplitude Energy's HSEC Policy commitment to take all reasonably practicable steps to protect the health and safety of workers, contractors, partners, and communities, and ensuring its business is conducted in an environmentally responsible manner. Relevant management system processes adopted to implement and manage hazards to ALARP include: • Risk Management (MS03) • Technical Management (MS08) • Health Safety and Environment Management (MS09) • Incident and Crisis Management (MS10) • Supply Chain and Procurement Management (MS11) • External Affairs & Stakeholder Management (MS05).
External Context	Suggestions from State emergency agencies have been adopted unless otherwise discussed and agreed. Amplitude Energy retains contact details of First Nations organisations to be contacted in the event of a spill, noting traditional owners may alternatively be engaged by the State Control Agency.
Demonstration of meeting the defined acceptable levels in the OPP	Sections 9.5.7 and 9.6.7 of the **East Coast Supply Project OPP** demonstrates the acceptability of impacts and risks associated with accidental hydrocarbon release. This acceptability demonstration is also valid and appropriate for the Activity (given this Activity is described and assessed in the OPP) and is supported by further evaluation against the acceptability factors as detailed above. Impacts and risks associated with the Activity are expected to be below the defined acceptable levels as described in the OPP by meeting the additional acceptability criteria described in Section 5.2.4.3, such as that for accidental hydrocarbon release: • OPP EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • OPP control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence, likelihood and residual risk are the same as those defined in the OPP. • No changes to internal or external context as defined in the OPP including no additional objections and claims were raised against this aspect.
Acceptability Outcome	Acceptable Amplitude Energy has determined that the risks related to an accidental hydrocarbon release are acceptable, based on:

Accidental hydrocarbon release	
	• The planned management of risks integrates Amplitude Energy internal requirements, including relevant management system processes. • The activities will be managed in a way that is not inconsistent with the relevant principles of ESD. • The proposed controls and impact and risk levels are not inconsistent with national and international standards, laws, and policies including applicable plans for management and conservation advices, and significant impact guidelines for MNES. • Feedback has been received from relevant persons that has informed the values and sensitivities /existing environment, impacts and risks, performance outcomes or mitigation measures. To manage impacts to receptors to or below the defined acceptable levels the following EPOs have been applied: EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment EPO17: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable.

7.0 Oil Spill Response

7.1 Oil Spill Response Strategies

This section represents the risk assessment for oil spill response options.

Amplitude Energy has developed a regional Offshore Victoria OPEP (VIC-ER-EMP-0001) which contains further detail of the response strategies that would be implemented in the event of a hydrocarbon spill and the relevant control measures.

7.1.1 Response Option Selection

Spill response strategies are triggered in the event of a hydrocarbon spill. Not all response options and tactics are appropriate for every oil spill. Different oil types, spill locations, and volumes require different response options and tactics, or a combination of response options and tactics, to form an effective response strategy.

A Net Environmental Benefit Analysis (NEBA) is the process of considering advantages and disadvantages of different spill response options (including no response) to arrive at a spill response decision resulting in the lowest overall environmental and social impacts. NEBA is undertaken at a strategic level to identify pre-determined recommended response strategies, and an operational NEBA is undertaken throughout the emergency response. The process requires the identification of sensitive environmental receptors and the prioritisation of those receptors for protection so that the strategic objectives of the response can be established.

Table 7-1 provides an assessment of the available oil spill response options, their suitability to the potential spill scenarios and their recommended adoption for the identified events.

7.1.2 Response Priority Areas

To support the identification of priority response areas, shoreline sensitivity analysis and mapping was undertaken guided by IPIECA principles and informed by the regional description of the environment and understanding of receptor presence in the region. The Response Priority Areas (RPAs) are detailed in the OPEP.

7.1.3 Pre-spill Net Environmental Benefit Assessment

Each of the RPAs used location specific information to refine the receptor presence and include a priority ranking based upon the sensitivity criteria detailed in the OPEP.

An assessment of the effective spill response strategies and the net benefit they offer, specific to the sensitivities located within each of the RPAs is also provided in the OPEP.

Table 7-1 provides an assessment of the available oil spill response options, their suitability to MDO and condensate, and their recommended adoption for the loss of containment scenario’s relevant to this EP.

Table 7-1: Suitability of Response Options for MDO and LOWC Condensate Spills

Response Strategy	Description	MDO Spill Assessment			Condensate Spill Assessment		
			Viable Response ?	Net Benefit ?		Viable Response?	Net Benefit?
Source Control	Limit flow of hydrocarbons to environment.	Achieved by vessel SOPEP / SMPEP	✓	✓	In accordance with the Source Control Emergency Response Plan. The plan provides a response to release incidents from subsea wells (refer Section 7.2.2	✓	✓
Monitor & Evaluate	To maintain situational awareness, all monitor and evaluate options suitable: • direct observation – aerial or marine • vector calculations • Oil Spill Trajectory Modelling (OSTM) • satellite tracking buoys.	Modelling identifies that for MDO spills under favourable conditions, approximately 83.1% of the oil mass should have entrained and a further 11.4% will evaporate within the first 24 hours. Leaving only a small proportion floating on the water surface (1.3%) (Section 6.8.3.2). Aerial surveillance is considered more effective than vessel surveillance to inform spill response and identify if oil has contacted shoreline or wildlife. Vessel surveillance limited in effectiveness in determining spread of oil. Manual calculation based upon weather conditions will be used at the time to provide guidance to aerial observations. Oil Spill trajectory modelling utilised to forecast impact areas. Deployment of oil spill monitoring buoys at the time of vessel incident will assist in understanding the local current regime during the spill	✓	✓	Modelling identifies that under favourable weather conditions, approximately 70.1% of the mass is shown to have entrained and a further 23.8% has evaporated 24 hours after the spill, leaving only a small proportion floating on the water surface (<1%). This means the condensate will evaporate readily when on the water surface, with limited persistent components to remain on the water surface over time (Section 6.8.3.3). For a significant spill event (LOWC), hydrocarbons will likely be present at the surface for the duration of the release. To maintain situational awareness, all monitor and evaluate techniques will be considered during condensate spill incidents to understand the possible impacts (refer to Section 7.2.6.3 for risk and ALARP assessment).	✓	✓

Response Strategy	Description	MDO Spill Assessment			Condensate Spill Assessment		
			Viable Response?	Net Benefit?		Viable Response?	Net Benefit?
		event (refer to Section 7.2.6.3 for risk and ALARP assessment).					
Dispersant Application	Breakdown surface spill & draw droplets into upper layers of water column. Increases biodegradation and weathering and provides benefit to sea-surface /air breathing animals.	MDO, only has a small persistent fraction, due to the fact that the hydrocarbon will spreads rapidly to thin layers and evaporate or entrain. There is insufficient time to respond while suitable surface thicknesses are present. Dispersant application can result in punch-through where dispersant passes into the water column without breaking oil layer down if surface layers are too thin. Application can contribute to water quality degradation through chemical application without removing surface oil. Considered not to add sufficient benefits.	X	X	Otway condensates have low levels of persistent hydrocarbon and will weather rapidly. Given the low viscosity of this liquid any surface oils will spread rapidly to thin layers, as reflected in predictive modelling, and are not suited to dispersant application due to potential “punch-through” (refer to MDO assessment). Possible viable application for safety purposes (safe access to the well for capping). Possible net benefit where it facilitates safe access to the well for capping. Dispersant application to only occur at the well site (Commonwealth waters).	✓ (Possible)	✓ (Possible)
Contain & Recover	Booms and skimmers to contain surface oil where there is a potential threat to environmental sensitivities.	Response relies on calm sea conditions, thicknesses >10 µm to collect and adequate deployment timeframes. MDO spreads and disperses rapidly to below recoverable thicknesses. The prevailing meteorological conditions in the Otway would also likely preclude containment and recovery techniques. In general, method only recovers approximately 10-15% of total spill residue, creates significant levels of waste,	X	X	As per MDO assessment, surface oils will not be present in suitable thicknesses to make contain and recover a viable response option given the low viscosity of the condensate hydrocarbons. In general, method only recovers approximately 10-15% of total spill residue, creates significant levels of waste, requires significant effort and suitable weather conditions (calm) to be deployed. Weather conditions limit deployment in the Otway offshore environment.	X	X

Response Strategy	Description	MDO Spill Assessment			Condensate Spill Assessment		
			Viable Response?	Net Benefit?		Viable Response?	Net Benefit?
		requires significant effort and suitable weather conditions (calm) to be deployed. Weather conditions limit deployment in the Otway offshore environment.					
Protect & Deflect	Booms and skimmers deployed to protect environmental sensitivities.	MDO has a low component of persistent components that have the potential to reach shorelines. Effective response strategies to protect open estuaries that have environmental sensitivities (aquatic vegetation, recreational users) may be beneficial. For example, booming or sand berms may offer some net benefit to estuarine environments which are open to the sea. Stochastic modelling indicated that Port Campbell may be contacted by hydrocarbons at low thresholds within 1 day in the event of a LOC from a vessel. Success of protection and deflection techniques at this location will be influenced by the prevailing and generally dynamic conditions at the time of the spill. Protection and deflection techniques will be considered if shoreline contact is predicted at sensitive receptors (refer to Section 7.4 for risk and ALARP assessment).	✓	✓	Predictive modelling identified a number of sensitive shoreline systems that may be contacted by shoreline accumulation in the event of an unplanned LOWC. The closest inlet to the activity (and one of the more exposed sites from a spill scenario perspective) was identified at Port Campbell Bay. Stochastic modelling indicated that the minimum time to contact at Port Campbell in a worst-case release could occur within 1 day of a release. Deterministic modelling indicated that the minimum time for shoreline accumulation at low thresholds will occur within 4.2 days of a release. The success of this strategy will be influenced by the prevailing and generally dynamic conditions at the time of the spill. Options which can be considered include a simple boom arrangement in the mouth of a small estuary or installation of a temporary sand berm to prevent residue ingress (refer to Section 7.4 for risk and ALARP assessment). Shoreline booming (i.e. sea booming) is not considered viable due to the high energy environment of the Otway coast and the hazards	✓	✓

Response Strategy	Description	MDO Spill Assessment			Condensate Spill Assessment		
			Viable Response?	Net Benefit?		Viable Response?	Net Benefit?
					of deploying and maintaining in such an environment.		
Shoreline Clean-up	Where shoreline impact is predicted, shoreline clean-up assessment technique (SCAT) assessment is initiated. If SCAT and Net Environmental Benefit Assessment (NEBA) assess clean-up is of net benefit, initiate clean-up. Shoreline clean-up is a last response strategy due to the potential environmental impact; heavy resource requirements; health and safety concerns to responders; logistical complexities and waste management considerations	Shoreline contact by MDO may occur at low, moderate and high levels from an MDO spill (generally less than 100 g/m^2). Modelling of the worst-case results following a LOC of MDO predicted shoreline volume of 43.1 m^3 of MDO contacting Corangamite 1 hour after the spill event. Much of the shoreline affected by condensate residues is rock platform or sandy beach stretches with backing cliffs. Shoreline clean-up may hazardous and due to the nature of the shoreline habitat remediates rapidly. Access to these areas is limited along the Otway coastline. MDO residue reaching accessible sand shorelines is likely to infiltrate sand where it will be susceptible to remobilisation by wave action (reworking) until naturally degraded. Due to the light nature of the product and its dispersion in the environment prior to reaching shorelines it is possible that there would be insufficient quantities for manual clean-up. MDO does not discolour shoreline as much as other hydrocarbon	✓	✓	Shoreline contact by condensate may occur at low, moderate and high levels from an LOWC spill (generally less than 100 g/m^2 with a few receptors that may be contacted by hydrocarbons up to 1,000 g/m^2). Deterministic modelling of the worst-case results following a LOWC predicted shoreline volume of 264.9m^3 of condensate residue by 113 days after the spill event. Much of the shoreline affected by condensate residues is rock platform or sandy beach stretches with backing cliffs. Shoreline clean-up may hazardous and due to the nature of the shoreline habitat remediates rapidly. Access to these areas is limited along the Otway coastline. Hydrocarbons reaching sandy shorelines are predicted to infiltrate sand where the residue will be susceptible to remobilisation by wave action (reworking) until naturally degraded. Due to the light nature of the product and its dispersion in the environment prior to reaching shorelines it is possible that there would be insufficient quantities for manual clean-up. The response strategy may offer net benefits to shoreline species which are sensitive to oil	✓	✓

Response Strategy	Description	MDO Spill Assessment			Condensate Spill Assessment		
			Viable Response?	Net Benefit?		Viable Response?	Net Benefit?
		types. Manual collection techniques likely to have limited effectiveness. Use of sediment reworking is possible. However, the potential for shoreline assessment and clean-up will be considered as part of the NEBA in the event of a spill incident. Response strategy offers net benefit to shoreline species which are sensitive to oil spill residues (e.g., birds) (refer to Section 7.5 for risk and ALARP assessment).			residues (e.g., birds) (refer to Section 7.5 for risk and ALARP assessment). Shoreline assessment and clean-up is considered viable along certain sand sections of the Otway coast and will still be considered as part of a NEBA in the event of a spill incident.		
Oiled Wildlife Response (OWR)	Consists of capture, cleaning and rehabilitation of oiled wildlife. May include hazing or pre-spill captive management. In Victoria, this is managed by DEECA.	Given limited size and rapid spreading of the MDO spill, large scale wildlife response is not predicted. However, there is the potential that individual birds could become oiled in the vicinity of the spill. OWR may offer net benefits for both seabirds and shorebirds within the surface oil and shoreline residue zones >100 g/m^2 which result from the MDO spill. OWR is both a viable and prudent response option for this spill type (refer Section 7.6 for risk and ALARP assessment).	✓	✓	Given the nature of the Otway condensate and its rapid spreading to thin layers and limited volumes of residue washed ashore, it is predicted there will be limited impacts to species sensitive to oil residues such as birds. However, OWR may offer net benefits to seabirds which come into contact and area affected by these minor residues. OWR is both a viable and prudent response option for this spill type (refer Section 7.6 for risk and ALARP assessment).	✓	✓

7.2 Source Control

7.2.1 Vessel LOC

Source control arrangements for significant vessel spills resulting from fuel tank perforation includes:

- closing water-tight doors
- checking bulkheads
- determining whether vessel separation will increase spillage
- isolating penetrated tanks
- tank lightering etc.

Source control relies upon the activation of the vessels SOPEP / SMPEP (or equivalent).

7.2.2 Subsea LOWC

Source control activities for a LOWC, including methodologies and resources to implement source control and limit the hydrocarbon released to the environment are detailed in the Source Control Emergency Response Plan (SCERP) (VIC-DC-ERP-0001).

Typical source control activities for a LOWC include:

- site survey and debris clearance
- manual intervention of well control equipment
- subsea dispersant application
- well capping
- relief well.

Table 7-2 provides an overview of the applicability of these LOWC source control response options for the spill scenario covered within this EP.

Table 7-2: Overview of Level 3 Source Control Options Applicable to the Activity

Source Control Techniques	Site Survey and debris clearance.	Manual Intervention of Well Control Equipment	Subsea Dispersant Application	Well Capping	Relief Well
Suitability ***Is the response strategy suitable for the scenario?***	Yes – survey would be required to confirm the leak source. Debris clearance may be required to deal will equipment deployed to the well from the MODU.	Yes – manual intervention would be attempted if auto-shut-in fails.	Possible - as a means of reducing VOCs at surface to support safe well access. Unlikely to be of benefit as an environmental impact mitigation measure.	Unlikely to be suitable for the well considering water depths and high energy environment. If high flow rates, given shallow water depths, a cap is unlikely to be deployable given VOCs and buoyancy at surface. Retained as a possible solution if low flow and conditions permit.	Yes – if intervention not successful then relief well would be required as primary response strategy.
Functionality / Feasibility ***How does the response strategy perform to achieve its required risk reduction?***	Site survey assists in identifying equipment status and hazards. Debris clearance equipment is used to enable access to the well if obstructed. This option enables data to be gathered and the site to be prepared to both select and enable subsequent source control options.	Capability to manually intervene the well control equipment will be maintained throughout the campaign when well control equipment is deployed.	Subsea dispersant application is sometimes considered as an environmental mitigation to reduce shoreline loading of oil by increasing dispersion into the water column, enhancing dilution and weathering. Given the well is gas/condensate, the efficacy of dispersant application would be expected to be low, however is retained as an option in a low-flow scenario where dispersant, if applied at the well, may help to reduce the concentration of VOCs at surface and thereby help reduce risks to response	Well capping can curtail the hydrocarbon flow prior to permanent plugging of the well. This source control option is unlikely to be possible given the shallow water depths and high energy offshore environment. Anticipated WCD flow rates from the well would affect cap land out and create a flammable environment at surface restricting access. Studies undertaken by Trendsetter Engineering have considered capping	This source control technique has been proven successful in Australia (e.g. Montara) and internationally (Macondo). Considered technically feasible and effective on the blowout scenario. Stemming the flow of hydrocarbons from a well by injecting kill density fluid into the well bore is a proven method of regaining control of a well. This is often achieved by directionally drilling a relief well to intercept the wellbore and then pumping fluid to stem

Source Control Techniques	Site Survey and debris clearance.	Manual Intervention of Well Control Equipment	Subsea Dispersant Application	Well Capping	Relief Well
			operators in the immediate vicinity of the well. The equipment to perform the task is available. Monitoring is required during the response to confirm optimum treatment rates and overall efficacy.	options for gas/condensate wells in the Bass Strait, in greater water depths (generally more amenable to capping) compared to the Otway facilities. The studies ruled out capping, including via direct and offset installation as an option for the reasons described above. Though essentially ruled out, Amplitude Energy would still consider the use of capping equipment on a case-by-case basis.	the flow. Once the well is stabilised, cement can be pumped into the well to form a permanent barrier to isolate the flow zone.
Dependencies / Effectiveness ***Does the response strategy rely on other systems to perform its intended function?***	Response is reliant on availability of equipment and trained / experienced personnel to undertake activities: • subsea debris removal equipment and operators • survey vessel and/or Support vessel. • possible safety case and/or revision.	Response is reliant on availability of equipment and trained / experienced personnel to undertake activities: • subsea intervention equipment and operators • survey vessel and/or Support vessel • safety case and/or revision.	Response is reliant on availability of equipment and trained / experienced personnel to undertake activities: • subsea decommissioning / dispersant application equipment and operators • support vessel • safety case and/or revision.	Response is reliant on availability of equipment and trained / experienced personnel to undertake activities: • support vessel • Well capping solution/vendor • well Control Specialist Company (including emergency air freight capability). • safety case and/or revision.	Response is reliant on availability of equipment and trained / experienced personnel to undertake activities: • MODU and trained staff • well engineering services and management contractor • well control specialists • well equipment availability

Source Control Techniques	Site Survey and debris clearance.	Manual Intervention of Well Control Equipment	Subsea Dispersant Application	Well Capping	Relief Well
					• safety case and/or revision.
Availability and Timely ***The response strategy is available to perform its function, in sufficient time?***	Survey and debris clearance equipment is available within Australia as part of the AMOSC Subsea First Response Toolkit (SFRT). Similar packages are also available internationally including from Wild Well Control (WWC).	The campaign will have the capability to mount an intervention response. At least two work-class ROVs and tooling compatible with the subsea wells and project pressure control equipment will be mobilised for the campaign.	Subsea Dispersant equipment is available within Australia as part of the AMOSC. Other subsea dispersant equipment packages are available internationally including from WWC. Dispersant stocks are available within Australia through AMOSC. Additional stocks may also be available through AMSA if requested as per the National Plan. This EP includes a dispersant needs analysis demonstrates there are sufficient stocks available for a response.	Capping stack through WWC is available in Scotland and other providers in Singapore and can be sea or air freight to Australia. Suitable construction support vessels (CSVs) are typically located in Singapore, NWS and within the region depending on industry activity. Estimated timeline to achieve successful capping option (if deemed suitable for the incident) is provided below.	Relief well MODU, services and equipment can be sourced via APPEA Mutual Aid MoU. Timeline breakdown is provided in below.

7.2.2.1 Site Survey and Debris Clearance and Intervention

Scope of Activity

Site survey and debris clearance are key preliminary tasks that assist in selecting subsequent source control options.

- Survey allows the response team to understand any issues which may preclude installation of equipment or other constraints to safely enter and work in the area.
- The need for debris removal activities will dependent upon the scenario, damage to the subsea facilities such as subsea well components, MOU riser and well control equipment. Debris clearance may involve the use of ROVs and cutting of equipment to ensure a clear path for manual intervention and/or capping.
- Intervention and is likely the earliest opportunity to stem or stop the release of hydrocarbons. Intervention would include the use of ROVs and tooling which can interface with the Otway wells and project subsea pressure control equipment.

Various options are available for equipment supply (Table 7-3). Response specialists such as AMOSC/Oceaneering and Wild Well control can provide equipment packages.

Table 7-3: Indicative Survey and Debris Clearance Equipment

Response Options	Equipment Applicable to Source Control Options
Survey Debris Clearance Intervention	• Cameras - inspection ROV operated • ROVs • Grinders / super grinders • Impact wrenches • Multipurpose cleaning tools • Remote control units • Hydraulic cutters • Chopsaws • Diamond wire cutters • Hydraulic power units • ROV dredges • Torque tools • Test jig • Pressure control equipment intervention skid and operating equipment • Linear valve override tools • Manipulator knife • Flying lead orientation tool • Umbilicals.

Site Survey and Debris Clearance and Intervention RTMs

Table 7-4 outlines the key activities and estimated response time model (RTM) associated with gaining access to inspection, debris clearance, intervention and subsea dispersant equipment. The RTM considers response times for:

- Sourcing applicable debris removal equipment and subsea dispersant will be through a 3rd party provider such as AMOSC (SFRT based in Western Australia); hardware may alternatively be

mobilised via WWC (Houston) where it supports best case response times. Table 7-4 shows the RTM for the AMOSC SFRT equipment.

- Dispersant stores are available in Victoria (Geelong) and available through AMOSC's warehousing facilities who will also manage inventory levels through the response. The project RTM is aligned to industry RTM with the project variable component transportation time from warehouse to port facility.

Table 7-4: RTM Subsea First Response Tools

3rd Party (AMOSC)	Time (Days)	Cumulative (Days)
Initial notification to arrival of crews at warehouse to load trucks	0.25	0.25
Prepare and load equipment on trucks (5 in total)	0.65	0.90
Transit time (road) to Portland	3.00	3.90
Unload at Portland	0.31	4.21
Charge SAM	2.00	6.21
Load SFRT to vessel and sea fasten	0.13	6.33
Transit to Wellsite and commence scope	0.32	6.65
Set-up at site and deploy	1.00	7.65
Total Time (days)		**7.65**
Additional time to mobilise project vessel (base case)	0	
Additional time to mobilise additional vessel (contingency)	0 - 2	

7.2.2.2 Subsea Dispersant Application

Scope of Activity

A LOWC is predicted to result in a surface gas plume at the sea surface, resulting in high levels of VOCs near the plume. Additional volumes of condensate transported to the surface are predicted to spread out from the flowing well and contribute to increased levels of VOCs within the air surrounding the flowing well, increasing the risk LELs may be exceeded nearer to the well site.

Dispersant application is included as a safety-related control measure where VOCs from surface oil may exceed lower explosive limits (10% LEL) around well control activities (i.e. well intervention from surface).

The methods of dispersant application that may provide a benefit for the purposes of LEL reduction are:

- Subsea dispersant application. Relevant to a lower-flow / capping scenario. Noting dispersant application subsea is unlikely to be safe (proximity to wellsite) or effective given the shallow water depth, high volumes of gas (and low liquids) that would lift dispersant to surface at a high rate within the gas plume.
- Dispersant application would be limited to the near vicinity of the well control response operations only, and outside of state waters and state or national marine parks

Resources for Dispersant Application

Depending on the scenario, various resources may assist in reducing LELs in the air around the well response site to safe working levels. Key components requiring mobilisation / activation and their availability (or accessibility) is described within the OPEP. For larger resource components such as the subsea dispersant application package; this equipment can be road freighted if sourced within Australia or airfreighted either to Melbourne or to a DSV location (e.g. Singapore).

There are several dispersant products stockpiled within Australia, and which are available through AMOSC; these are referred to as oil spill control agents (OSCA's). Those which may potentially be effective on light oils include Dasic Slickgone NS and Dasic Slickgone EW; Dasic Slickgone NS is also currently selected in Australia for subsea applications (AMSA 2019). Given its availability, potential efficacy for gas condensate types detailed within this OPEP, and registration as an OSCA, Dasic Slickgone NS is a prime candidate for selection. This does not preclude the use of other OSCA's noting all are selected on the basis of their moderate (or lesser) toxicity (Irving and Lee 2015), and also any product would be assessed prior to use per the Amplitude Energy Offshore Chemical Assessment Process. Additional stockpiles may be requested through AMSA as per the National Plan.

Resource Required and Availability

Table 7-10 provides an indication of the amount of dispersant required for the subsea dispersant (SSD) package to treat the worst case LOWC scenario (identified in Section 6.8). A 1:100 application ratio has been used, as recommended within IPIECA (2015), to determine the volume of dispersant required for the worst-case scenario. Table 7-10 also describes the NS Dasic Slickgone dispersant stocks within Australia available to adequately support a dispersant response.

The OPEP provides further details the capability to undertake dispersant application activities in accordance with the identified required resources identified in Table 7-10, their availability, and hence Amplitude Energy's capability to support a response. Evaluation has determined that there are sufficient dispersant stockpiles within Australia to maintain a dispersant response for the duration of a worst-case spill event.

Table 7-5: Analysis of Dispersant Required vs. Availability

Description	Parameter
Dispersant Required	
Worst case release duration (days)	104
Total condensate release volume (m^3)	10,562
Average release rate (condensate) (m^3/days)	101.6
Dispersant application ratio	1:100 (dispersant: oil)
Dispersant required (m^3/days)	1.2
Total Dispersant required*	124.8 m^3
Dispersant Availability	
AMOSC Geelong (Vic)	79 m^3
AMOSC Fremantle (WA)	504 m^3
AMOSC Exmouth (WA)	75 m^3
AMOSC Members Dampier (WA)	5 m^3
Total	663 m^3
Needs Provided for?	Yes

7.2.2.3 Well Capping

Scope of Activity

Capping provides a means to hydraulically seal a well and stop the flow of hydrocarbons during a LOWC, prior to the completion of a relief well should intervention be unsuccessful. Capping may not be suitable in all scenarios or under all environmental conditions; relief well drilling remains the primary source control solution in the event of a LOWC.

Various well capping solutions may be suitable in responding to a LOWC when drilling and a solution to cap during drilling campaigns will be maintained whilst there is a risk of LOWC.

Capping Feasibility and Solutions

The feasibility/effectiveness of well capping and relief well drilling is provided in Table 7-2. As shown in this assessment, capping is unlikely to be selected for regaining control of the Otway wells, as a loss of well control in shallow water depths with any of the wells flowing at absolute open flow (AOF) will require a relief well to perform the well kill. Running a capping stack into a high velocity jet stream of dry gas in shallow water is not considered practicable. Despite this, for a loss of well control event a capping stack will be considered on a case-by-case basis.

An example of where a capping equipment may be deployed would be if the well partially bridged downhole – reducing or eliminating flow sufficiently to consider running a capping stack. Under these circumstances the running of the capping stack would be dependent on many factors including but not limited to:

- Gas readings at the sea surface of less than 10% LEL.
- Gas boil not effecting the stability of the vessel/s.
- Suitable weather conditions for running the capping stack.
- Risk assessment.

Deployment Vessels

Amplitude Energy also monitors the marine market and access to active vessels with a range of specifications that may be required for cap deployment. Vessels of the type and specification that would be required for this activity can typically be sourced from Singapore if not already in country.

The prerequisites for a capping vessel include:

- CSV type vessel or similar
- DP2 minimum
- Minimum 65T heave compensated crane
- Work class ROV Installed
- Australian Safety Case.

Capping RTMs

Table 7-6 outlines the key activities and estimated timeframe associated with capping. The RTMs consider sourcing a vessel from various regions. The presence of a suitable vessel being in the region is dependent on other operator activities and schedules; vessel availability will be monitored by Amplitude Energy and response time models adjusted to reflect best available timeframes.

The Amplitude Energy well engineering team and well control partners would collectively assess the situation and evaluate equipment and logistics needs. Installing a subsea well cap requires access to personnel with specialised knowledge on the operation of such systems. Amplitude Energy

maintains contracts with well control companies (such as Wild Well Control) to supply technical services and guidance, equipment, specialised well control and capping installation.

Table 7-6: Capping System Installation Timeline

Activity Description - Capping Stack Source Control		**Intl Case**	**Mid Case**	**Local Case**
Capping Vessel Mobilisation Point		Asia - Singapore	Northwest Shelf	Victorian Waters
Capping Vessel Type		CSV	CSV	CSV
Capping Stack Equipment		Capping Stack	Capping Stack	Capping Stack
No.	Activity Description	Estimated Days	Estimated Days	Estimated Days
LOWC – Caping Stack Feasible				
1	Activate well control team and commence planning	2.0	2.0	2.0
2	Contract and mobilise CSV and transit to port facility (concurrent with activities No. 3-7)	23.0	14.0	6.0
3	Prepare capping stack package mobilisation from Scotland	5.5	5.5	5.5
3.1	Initial callout to arrival of crews at warehouse to load trucks	0.5	0.5	0.5
3.2	Sourcing aircraft and obtaining landing rights	0.5	0.5	0.5
3.3	Equipment movement to Prestwick Airport	2.0	2.0	2.0
3.4	AN124 transit to Prestwick airport	2.0	2.0	2.0
3.5	Load AN124	0.5	0.5	0.5
5	Air freight capping stack from Scotland (Prestwick Airport) to Melbourne (Airport)	1.5	1.5	1.5
6	Unload capping system and customs clearance	1.0	1.0	1.0
7	Transit capping stack / equipment to Port Facility	0.5	0.5	0.5
8	Assemble, perform functionality and pre-deployment checks	1.5	1.5	1.5
9	Load-out and sea fasten on CSV	1.0	1.0	1.0
10	Transit from port facility to Wellsite	0.7	0.7	0.7
11	Salvage operations to clear path for capping system (if not completed prior)	5.0	5.0	5.0
12	Position and deploy capping stack to well and perform shut-in operations	3.0	3.0	3.0
13	Well no longer flowing - source controlled	-	-	-
Total Time Estimate (days)		34.7	25.7	21.7

Note:
Capping response concurrent with Inspection and Debris clearance response; cap deployment follows confirmation of suitable deployment pathway and agreement to release by provider.
Vessel with AU Safety Case preferentially selected.

7.2.2.4 Relief Well

Scope of Activity

The scope of drilling a relief well is the same as drilling a standard well although it will be a deviated well due to the need to drill at distance from the original flowing well. A relief well is typically drilled

as a straight hole down to a planned kick-off point, where it is turned towards the target using directional drilling technology and tools to get within 30 - 60 m of the original well. The drilling assembly is then pulled from hole and a magnetic proximity ranging tool is run on wireline to determine the relative distance and bearing from the target well. Directional drilling continues with routine magnetic ranging checks to allow for the original well to be intersected. Once the target well is intersected dynamic kill commences by pumping kill weight mud and cement downhole to seal the original well bore.

Planning for the relief well will begin simultaneously with other well intervention options. Outline relief well plans, and methodology are contained in the activity SCERP. This plan details the process for relief well design with key activities prioritised as part of the immediate response operations:

- Mobilisation of well control and relief well specialists.
- Confirmation of relief well strategy with well specialist to define MODU/vessel requirements:
  - Confirm relief well location using geophysical site survey data. This will consider the prevailing weather at the time of the incident, seabed infrastructure in the area and directional drilling requirements for well intersection.
  - Validate relief well casing design.
- Screen available MODUs in the region with current Australian Safety Case and select MODU with appropriate technical specifications to execute the strategy*.
- Prepare and submit regulatory documentation required for relief well activities.
- Mobilise necessary equipment and services such as directional drilling equipment and appropriate ranging tools for relief well strategy.

*Note: A memorandum of understanding has been established between Australian operators (including Amplitude Energy) to expediate access to suitable MODUs, equipment and services for relief well drilling. If required Amplitude Energy is able to request the use of a MODU, equipment and services, that may be under contract to another operator. Minimum technical specifications for the well kill have been assessed in the Well Control Modelling Report for Otway, the selected MODU will meet these requirements and be capable of operating in the Metocean conditions at the relief well location.

Relief Well Design

The SCERP and relief well plan includes technical details as to the design and equipment requirements to drill a relief well in the Otway field. The APPEA relief well complexity assessment provides an overview of some of the key planning considerations which are addressed within these documents (Table 7-7). Annie-2 relief well is considered low complexity.

Detailed well kill modelling has demonstrated that the Otway wells (including Annie-2) can be killed via a single relief well. Relief wells are expected to have similar formation strength as existing wells in the Otway fields, hence modelling and planning has provided for formation fracture gradients recorded during historical drilling in the Otway. The basic design is for a directional relief well targeting the targeting the wellbore at base of the 9-5/8” casing (Annie-2 open hole scenario). The relief well architecture would comprise:

- 26” x 42” conductor hole drilled to ~ 45 – 60 m below seabed - sufficient depth as required for conductor loading and fatigue mitigation. 36” conductor will be installed and cemented to seabed
- 17-1/2” surface hole directionally drilled riserless to Narrawaturk Marl / Pember mudstone before running 13-3/8” surface casing, the well will be kicked off to achieve build up to the target sail angle (~40°)

- 12-1/4" hole directionally drilled with BOPs installed to before running 9-5/8" intermediate casing. The well will continue to maintain sail angle until reaching proximity of the target well and dropping to inclination at TD ~ 0-2° with the relief well casing point within close proximity of the target, allowing for interval of 9-5/8" casing and open hole below the casing shoe intersect the wellbore
- 8-1/2" hole drilled to TD, allowing for sufficient depth to intersection with adjustments possible in any direction from vertical. This section of the well is designed to intercept the target wellbore, which may be iterative until success.

Table 7-7: Relief Well Complexity Assessment (after APPEA 2021)

Design Parameter	**Complexity Category**								
	Low			Medium			High		
Flow Potential	Low pressure well (MASP < 5kpsi) and/or tight reservoir.			Low - moderate pressure well (MASP < 10kpsi), conventional reservoir.			High pressure well (MASP > 10kpsi) and/or high permeability reservoir		
Score	1	2	3	4	5	6	7	8	9
Reservoir Fluids	Dry Gas			Wet Gas / Condensate			Crude Oil		
Score	1	2	3	4	5	6	7	8	9
Trajectory (Relief Well)	• Max. inclination < 30˚ • Max. DLS < 2.5˚/30m • Nearest offset > 5km			• Max. inclination > 60˚ • Directional plan achievable with standard tools. • Offset wells < 5km that required A/C screening			• Max. inclination > 60˚ • Short radius or high build rate through shallow formations. • Multi-well location e.g. subsea drill-centre or platform.		
Score	1	2	3	4	5	6	7	8	9
Surface location	No constraints on surface location.			Seabed features, subsea or surface infrastructure limit choice of surface.			No constraints on surface location.		
Score	1	2	3	4	5	6	7	8	9
Temperature	Max. BHST < 150˚C			150˚C < Max. BHST < 180˚C -and/or SBM required			BHST > 180˚C		
Score	1	2	3	4	5	6	7	8	9
Long-lead equipment (casing & wellheads)	Standard casing and wellheads specs – same as source well.			Standard casing and wellheads specs – different from source well.			Unusual casing and/or wellhead specs. May require additional effort to assure timely supply.		
Score	1	2	3	4	5	6	7	8	9
Availability of technically suitable relief well rigs	Multiple suitable rigs likely to be operating offshore Australia.			At least one suitable MODU likely to be operating offshore Australia, with alternative rigs available in the region.			Limited availability of suitable rigs.		
Score	1	2	3	4	5	6	7	8	9

Design Parameter	Complexity Category								
	Low			Medium			High		
Hazardous formation fluids (H2S or CO2)	None expected			Expected, but not likely to affect material selection or relief well location.			Expected and may require special safety precautions, well materials, or affect the location of a relief well.		
Score	1	2	3	4	5	6	7	8	9

MODU considerations

The default surface location offset distance of the relief well is 1 km from the flowing well. The Metocean conditions (prevailing wind and currents) are considered when finalising the surface location. The location of the relief well is positioned to ensure the relief well MODU is upwind for as much time as possible to limit potential exposure to hydrocarbons from the LOWC. This places a relief well in water depths between approximately 60 m and 80 m, depending on the target well.

The relief well can be executed using a semi-submersible MODU (moored) similar to that used for drilling the development wells.

Moorings are expected to extend approximately 2 km from the MODU and may therefore extend beyond the distance of the Activity operational area, which may expand by approximately 1-2 km radius under emergency conditions.

MODU mooring and anchor suitability analysis have been completed previously for the Otway Title areas and has concluded that MODU anchors (e.g. 15mT Stevpris Mk6, a commonly available size) or rental anchors of the same or higher performance would be appropriate for Otway locations. At least two anchor handling and tow support (AHTS) vessels would be required to tow the MODU (if not self-propelled) and install the moorings. An active MODU would already be supported by AHTS vessels and hence would likely be accompanied by those vessels during relief well drilling. AHTS vessels could also be sourced from hubs such as NWS and Singapore.

There are typically multiple semi-submersible MODUs capable of drilling such wells within Australian waters. Higher activity is typical in the NWS, though drilling MODU's have also been active in the SE region through much of the period 2017-22.

For planning purposes Amplitude Energy assesses four mobilisation scenarios for sourcing a relief well MODU:

- Regional semi-submersible MODU in Victorian waters.
- Northwest Shelf semi-submersible MODU in West Australian waters.
- International (Asia) semi-submersible MODU in Singapore waters.
- International (Pacific) semi-submersible MODU in New Zealand waters.

The mobilisation case of a relief well semi-submersible MODU from New Zealand has been reviewed and should a suitable MODU be available it would also be considered as part of the relief well planning. Access to MODU in New Zealand would depend on MODU contract commitments at the time and Title holder / Joint Venture and MODU owner willingness to release MODU, and the existence of a valid Australian Vessel Safety Case.

International time case – MODU is mobilised from Singapore

The international case model has been developed to assess mobilising a suitable MODU from outside of Australian waters. This may be due to a number of reasons for example:

- No active working MODU in Australian waters.
- Deficient MODU capabilities to drill and kill the well.
- MODU unable to be released due to restrictions (such as biosecurity, well control event, equipment failure, weather, regulator enforcement etc.).
- Complex scopes to suspend well and demobilise from location i.e. deep-water mooring recovery.

While other suitable MODU options are likely available closer to the relief well site there should not be a requirement to look further than the area of Singapore which continually services the oil and gas and maritime industries.

The base case transit time is the longest of all cases presented. Additionally, the selected MODU should have a current Australian Vessel Safety Case and no restrictions to enter the county.

Mid time case – MODU is mobilised from Northwest Shelf

The mid case model has been developed to assess bringing in a suitable MODU from the Northwest Self (NWS) (location Exmouth). This may be due to a number of reasons for example:

- No active suitable working MODU in local Victorian waters.
- Deficient MODU capabilities to drill and kill the well.
- MODU unable to be released due to restrictions (such as biosecurity, well control event, equipment failure, weather, regulator enforcement etc.).
- Complex scopes to suspend well and demobilise from location i.e. deep-water mooring recovery.

The Exmouth point of departure for the mobilisation is a nominal position in the NWS; a MODU further North in the area would require additional transit time. However, this would not be excessive or warrant a separate RTM estimate.

The NWS is the presently the main activity hub for oil and gas operations in Australia, multiple companies have continuous MODU operations on the NWS. Hence the area is likely to hold multiple options for securing relief well semi-submersible MODU. Additionally, transit time is improved when compared to the base case transit time.

Local time case – MODU is mobilised from Victorian waters

The local case model has been developed to assess a technically capable and locally available semi-submersible MODU in the offshore Victoria area. Transit time is improved for the local case when compared to the base and mid case. A suitable local rig would be the preferred option during a relief well operation but may not be selected for several reasons for example:

- Lack of appropriate MODU capabilities to drill and kill the well.
- RTM favours selection of alternate MODU (Complex scope to suspend well and demobilise from local location, stacked or requirement for hull inspection prior to mobilisation).
- MODU unable to be released due to restrictions (such as well control event, equipment failure, weather, regulator enforcement etc.).
- No MODU available locally during activities.

The Victorian offshore oil and gas sector is serviced sporadically by semi-submersible MODUs with Title holders mobilising more frequently to NWS (Mid case) from Asia. Therefore, should a relief well MODU be required it will likely be mobilised from either the NWS or Asia. Response Time Model (RTM) estimates have been developed and will continue to be reviewed and updated to reflect the most favourable case mobilisation of relief well MODU to the relief well location.

Relief Well RTMs

Amplitude Energy RTM models contain the same activities and time for well construction, dynamic kill and abandonment of the well. The time model only changes due to mobilisation point of the MODU.

Amplitude Energy has estimated the following timeframes for the total relief well installation and well kill scope (Table 7-8). The series of cases is used to help understand critical activities to undertaking the relief well scope. Amplitude Energy has assessed and selected a number of measures to debottleneck source control contingencies (ALARP assessment in Table 7-20).

Table 7-8: Relief Well RTMs

Response Time Model – Relief Well Drilling & Well Kill		**Intl Case**	**Mid Case**	**Local Case**
MODU Mobilisation Point		Asia - Singapore	Northwest Shelf	Victorian Waters
No.	Activity Description	Estimated Days	Estimated Days	Estimated Days
Source Control Relief Well Activation Phase				
1	Activate Well Control Team, commence planning and notifications	2.0	2.0	2.0
2	Select MODU, inspect and complete contracting work scope	6.0	6.0	6.0
3	Demobilise equipment from MODU	1.0	1.0	1.0
4	Retrieve anchors and commence MODU move preparations	2.0	2.0	2.0
MODU Transit Phase				
5	MODU Transit Phase	47.4	25.7	8.9
Well Construction, Ranging & Intercept, Well Kill Phase				
6	Run anchors and position MODU	2.0	2.0	2.0
7	Mobilise equipment to rig	1.0	1.0	1.0
8	Prepare to Spud	0.5	0.5	0.5
9	Drill 26" x 42” Conductor Hole Section	0.8	0.8	0.8
10	Run and cement 36” Conductor	1.5	1.5	1.5
11	Directionally drill 17-1/2” Surface Hole Section	2.3	2.3	2.3
12	Run and cement 13-3/8” Surface Casing	1.2	1.2	1.2
13	Run and test BOP	2.2	2.2	2.2
14	Directionally drill 12-1/4” Intermediate Hole Section	8.8	8.8	8.8
15	Run and cement 9-5/8” Intermediate Casing	3.7	3.7	3.7
16	Directionally drill 8-1/2” Reservoir Hole Section, ranging runs #1-4	15.4	15.4	15.4
17	Pre-kill preparations	0.5	0.5	0.5
18	Well kill operations, attempt #1	1.5	1.5	1.5
19	Pre-kill preparation	0.5	0.5	0.5
20	Well kill operations, attempt #2, flow stopped	1.5	1.5	1.5
Time to Complete Well Kill (days)		**101.7**	**80.0**	**63.2**
Relief Well Abandonment Phase				
21	Plug and abandon Well	4.5	4.5	4.5
22	Pull BOPs	1.2	1.2	1.2
23	Remove wellhead	0.8	0.8	0.8
24	Retrieve anchors and release MODU	2.0	2.0	2.0

Response Time Model – Relief Well Drilling & Well Kill	Intl Case	Mid Case	Local Case
Total Relief Well Duration (Days)	**110.2**	**88.5**	**71.7**

Regulatory Approval Timing Considerations

Planning for relief well drilling will occur in parallel to other tertiary well control responses. A key component of the relief well drilling will be the preparation, submission, and approval of the regulatory documents. Generally, for well operations the regulatory and risk management processes fall on critical path hence in an emergency these documents will require a high level of focus immediately to ensure they are in place prior to arrival of the MODU.

The following documents will require consideration:

- Vessel Safety Case (VSC):
  - The selected MODU is expected to have a valid VSC, and it is not expected to affect response times.
- Scope of Validation (SoV):
  - Any proposed significant change to an offshore facility (i.e. MODU or Vessel) will require a SoV to be proposed to NOPSEMA and agreed prior to submission of a SCR. Depending on the level of changes the time to complete and gain approval could possibly affect the response time to have regulatory documentation in place prior to start of relief well operations.
- Safety Case Revision (SCR):
  - The SCR will require preparation, submission and approval prior to operations and is expected to be on critical path for relief well activities (Table 7-9).
- Well Operations Management Plan (WOMP):
  - The in force WOMP is expected to be suitable for relief well drilling and not expected to require a revision and resubmitted.
- Environmental Plan (EP):
  - The EP is designed to provide for source control response activities. Significant changes may require resubmission subject to initial change assessment, though is not expected to affect overall response time.
- Well Activity Notice (WAN):
  - WAN is not expected to affect response time.

As part of the preparation of the above documentation a number of formal safety assessments will be conducted as part of risk management these include:

- Hazard Identification (HAZID) workshop (identity's risks, assesses hazards and mitigations to control works site hazards with aim to remove major accident events).
- Hazard Operations (HAZOP) workshop (risk assesses the operational sequence and place controls to reduce hazards to ALARP).
- Risk Assessments for safety critical equipment (Vessel Equipment, BOP, Mooring, Fluids Handling).

Table 7-9: Safety Case Revision Preparation and Approval Time

No.	Safety Case Revision Submission Key Steps (Standard MODU)	Time Estimate (Days)
1	Planning, regulatory consultation, HAZID/HAZOP Workshops, document preparation	2 weeks
2	Internal review cycle and submit	1 week
3	Priority Regulatory Assessment Period	1 week
Total time		**4 weeks (28 day)**

Response Arrangements

Amplitude Energy maintains contracts/agreements with specialist resources to supply well control expertise and support for drilling a relief well. This includes:

- Well engineering support services such as ADD Energy, AZTECH Well Construction, Airswift, Access Human Talent and Wild Well Control.
- Technical writing and risk engineering services to support regulatory documentation workflows and submissions is provided by experienced specialists such as ADD Energy.
- Wild Well Control: Well control specialists with experience in relief wells and the coordination of installation activities.
- Wellhead and casing materials supplier.

Amplitude Energy is party to the Industry Memorandum of Understanding to share drilling rigs, equipment and resources (well site services) in the event of an emergency. The MoU provides for the timely transfer of third-party contractual arrangements involved in the release of a MODU and well site services to the Titleholder for relief well drilling.

Equipment and materials needed to construct a relief well will be able to be sourced either directly from suppliers or through the industry APPEA Mutual Aid MoU.

All equipment and materials are tracked and identified prior to the commencement of the offshore activity through the “relief well readiness form” process (refer to OPEP Section 6.2: Source Control Resource Availability). All equipment and materials are expected to be sourced and transported to site during the SCR approval RTM, MODU transit and anchoring phase for the base and mid case response time model estimates. For the local MODU mobilisation case; an operational MODU would also have equipment and services, with additional equipment and services available via APPEA MoU.

Amplitude Energy will conduct a “relief well readiness check” and engage Title holders to ascertain and confirm the level of critical equipment inventories during the operational period for the purpose of drilling a relief well.

MODU activity outlook and monitoring

Amplitude Energy keeps a watching brief on vessel availability through industry forums and vessel broker updates and is also a participant of the Australian Drilling Industry Steering Committee (DISC). Through DISC, Amplitude Energy receives regular updates on the location and operational status of MODU’s operating in Australian waters, which could be made available for a source control response.

7.2.3 Cause of Aspect

The activities associated with source control that have the potential to impact marine environment are identified in Table 7-10 and described in subsections below.

Table 7-10: Source Control Activities that may Impact the Environment

Aspect / Phase	Activity component
Site survey and debris clearance	ROV operations
	Vessel operations
Subsea Dispersant	Subsea dispersant application
Well capping	Vessel operations
Relief well	Drilling operations
	MODU and vessel operations

The potential impacts and risks associated with vessel, MODU and ROV operations, including their presence within the field and operational discharges and emissions, are not expected to be similar to the impacts and risks already provided for vessel, MODU and ROV operations for the Activity within Section 6.0 of this EP. As such, these impacts have not been evaluated further within this section.

The potential impacts and risks associated with subsea dispersant application that may be used for a LOWC source control (if identified as a recommended response during the operational NEBA) has been identified as the strategy that may introduce impacts and risks that have not previously been assessed within this EP.

7.2.4 Aspect Characterisation

As per Table 7-1, subsea dispersant application may be used as a source control strategy in the event of a LOWC. Given the low levels of persistent components of the hydrocarbon, the condensate is expected to weather rapidly, with surface oils spreading rapidly to thin layers, as reflected in predictive modelling, and are not suited to dispersant application due to potential “punch-through”.

The source control strategy has been maintained as a possible viable application specifically for safety purposes (safe access to the well for capping). Due to potential sensitivities of some species to chemical dispersant, the dispersant will only be applied when the NEBA decision-making process has determined that its application will have a net environmental benefit, directed by the Control Agency.

Application of the subsea dispersant will be undertaken using a subsea dispersant wand attached to ROV so the dispersant can be applied directly to the well site.

See the regional Offshore Victoria OPEP (VIC-ER-EMP-0001) for further details for each technique.

7.2.5 Predicted Environmental Impact and Risks

The potential impacts associated with subsea dispersant application are:

- change in water quality

Potential risk:

- injury / mortality to marine fauna.

7.2.6 Impact and Risk Evaluation

7.2.6.1 Impact: Change in Water Quality

The application of chemical dispersant can be highly effective in assisting the natural process of biodegradation, minimising the risk of oil impacts to vulnerable coastal receptors, and reducing hazardous volatile organic compounds reaching the surface. However, the application of chemical dispersant will result in a localised reduction in the water quality within the receiving marine environment and may have an additional impact that has not been previously assessed, which are associated with its inherent toxicity.

The decision to use chemical dispersants, as with all response strategies, is governed by the outcomes of a NEBA, as directed by the Control Agency. Any dispersant used would be selected from the AMSA OSCA Register prior to use (AMSA 2024). Criteria for inclusion on the OSCA Register includes a ban on toxic components including benzene, carbon tetrachloride or other chlorinated hydrocarbons, phenols, cresols, caustic alkali, or free mineral acid.

Given the limited area over which dispersant would be used (i.e., the near proximity of the well site), the effects of dilution upon entering the water column, currents, wave action, and turbulence due to the flowing well, the water column is expected to be continually mixing, further diluting the dispersant. As such, changes to water quality are expected to be localised and short-term.

Furthermore, given the extent of the wider EMBAs expected for the two credible spill scenarios, any changes to water quality from the application of chemical dispersant within the restricted well site area is anticipated to be less than the extent of change to water quality that would result from the hydrocarbon spill itself.

Therefore, the predicted level of impact, i.e., the consequence of a change in water quality from an accidental release of hydrocarbon is evaluated as **Level 2**.

7.2.6.2 Risk: Injury / Mortality to Marine Fauna

Inherent Consequence Evaluation

The application of chemical dispersant into the marine environment has the potential to result in injury/mortality to marine species due the potential toxicity effects of the chemical dispersant. In general, the sensitivity of species to chemical dispersants depends on the species type and life-stage, the dispersant type, volume, and exposure duration.

The environmental receptors which may be impacted by elevated dispersant concentrations in the water column include pelagic fish and plankton. Demersal and benthic organisms are less likely to be exposed to high concentrations of dispersant given the buoyancy of dispersants and hydrocarbons from the flowing well relative to seawater; typically, relatively little oil reaches the seabed when compared to oil in the water column (Hook & Lee 2015; IPIECA 2015).

Secondary effects such as oxygen depletion (associated with biodegradation of the product) have the potential to impact marine communities. However, given the shallow water depths, dynamic nature of the environment resulting in continual mixing within the water column and replenishment of oxygen these impacts are considered unlikely.

Analysis of the representative ecotoxicity profiles available on the supplier safety data sheets (SDS) for Dasic Slickgone NS and Dasic Slickgone EW, dispersant types listed on the dispersants register on the OSCA list in Australia (AMSA 2024), indicate they will readily biodegrade and not bioaccumulate once in the marine environment. These dispersants are much less toxic than early-generation

dispersants, with acute toxicity values for Dasic Slickgone NS measured as 2.6 ppm (96h EC50) and Dasic Slickgone EW measured as 22.1 ppm (48h EC50), respectively (AMSA 2024).

A review of oil spill dispersants by Fingas (2008) confirmed that dispersant toxicity is consistently less than the toxicity of dispersed oil. A literature review undertaken in by CSIRO in 2014 discusses several studies that investigate the possible synergistic effects of dispersant and oil (Hook & Lee 2015). Whilst there are various results reported in the literature, recent studies on fish embryos indicate that the combination of oil and dispersant do not add appreciably to toxic response when compared to oil alone (Hook & Lee 2015).

An assessment on the toxic effects of subsea dispersant application of Dasic Slickgone NS was undertaken by AMSA and CSIRO to assess how long dispersant concentrations might exceed safe levels (PNEC) compared to how quickly the water refreshes, using conservative (worst-case) toxicity values from the SDS (AMSA-CSIRO 2016). The study identified that toxic effects were limited to within 160–500 m of the well, with concentrations dropping below concern levels beyond that (AMSA-CSIRO 2016). Toxicity is considered unlikely even near the well due to rapid dilution, water movement, and short exposure durations. Additional natural mixing from well turbulence, wind, and surface conditions further reduces dispersant concentration and exposure time. The study acknowledged that surface application (from vessels) might lead to higher short-term concentrations, but dilution before use and localised application keep potential toxic effects near the source (inside the operational zone) (AMSA-CSIRO 2016).

As such, the potential for toxic effect due to subsea dispersant application are considered to be limited, with impacts following the response operations are not expected given the limited potential for the chemicals bioaccumulate or persist within environmental matrices. The consequence evaluations for the receptors that may be within the immediate vicinity of the subsea dispersant application activities (the operational area) are shown in Table 7-11.

Table 7-11: Consequence Evaluation for Potential Dispersant Exposure – Ecological Receptors – Habitats and Marine Fauna

Impact and Risk Evaluation	
Corals	
Exposure Evaluation	**Consequence Evaluation**
Soft corals may be present within reef and hard substrate areas in the operational area. Dispersant application is a safety measure and will only be applied in the immediate vicinity of the well to lower VOCs around the response activities. Only organisms close to the dispersant application are expected to be exposed to concentrations which might have a toxic effect; these levels of dispersant would be expected to be short-lived with the water column being well mixed and relatively quick refreshment rates due to the dynamic nature of the ocean in the Otway Region.	Given the lack of hard coral reef formations, and the sporadic cover of soft corals in mixed reef communities, toxic impacts are considered to be limited to isolated corals. Consequently, the potential impacts to corals are considered to be **Level 2**, as they could be expected to result in localised short-term impacts to species/habitats of recognised conservation value, but not affecting local ecosystem functioning.
Plankton	
Exposure Evaluation	**Consequence Evaluation**
Plankton are likely to be exposed to concentrations of dispersant with the potential for toxic effect in areas where dispersant is applied.	Planktonic organisms could be impacted by dispersant via a number of pathways; studies of impacts to diatoms showed that cell membranes can be damaged, impacting survivability (Hook & Osbourne 2012). Plankton are numerous and widespread; they contain a myriad of species at various life stages and is a key component of the marine food web. Plankton distribution and composition is not uniform and is in a constant state of flux – it is influenced by natural variations in the oceans such as salinity, temperature, nutrient availability and currents. Given the short-term nature of possible exposure to dispersant, and the natural variations to plankton assemblages, recovery of both biomass and diversity would be expected within the days and weeks following the response. Consequently, the potential impacts to plankton are considered to be **Level 2**, as they could be expected to cause short-term and localised impacts, but not affecting local ecosystem functioning.
Benthic invertebrates	
Exposure Evaluation	**Consequence Evaluation**
Filter-feeding benthic invertebrates such as sponges, bryozoans, abalone and hydroids may be exposed dispersants, however, only within a very localised area and for a short time frame. In-water invertebrates of value have been identified to include squid, crustaceans (rock lobster, crabs) and molluscs (scallops, abalone); all	Acute or chronic exposure through contact and/or ingestion can result in toxic impact, effecting survivability. However, given the limited extent of dispersant application, and short-term nature of response activities (which might require dispersant application), impacts would be limited to low numbers, and are unlikely

Impact and Risk Evaluation	
may be present within the operational area. Several commercial fisheries for marine invertebrates are within the area predicted to be exposed above the impact threshold (see commercial fisheries and recreational fisheries).	to appreciably affect overall recruitment rates across the region Consequently, the potential impacts to marine invertebrate are considered to be **Level 2**, as they could be expected to cause short-term and localised impacts, but not affecting local ecosystem functioning.
Fish and Sharks	
Exposure Evaluation	**Consequence Evaluation**
Many species of fish, shark and syngnathids occur in the region and may occur within operational area; the species which may be present occupy pelagic and demersal environments. Fish, sharks and syngnathids therefore have the potential to be exposed to elevated concentrations of dispersant during response operations. There are no BIAs or Habitat Critical areas identified for EPBC Act listed fish within the operational area.	Pelagic free-swimming fish, sharks are unlikely to suffer long-term damage from dispersant exposure given dispersant use would be targeted and limited to response operations around the well. Syngnathids are less likely to be exposed to toxic levels of dispersant given they occupy demersal habitats, where elevated levels of dispersant are more likely in the upper water column. Elevated concentrations of dispersant in the near vicinity of the discharge could result in acute toxicity to marine biota such as juvenile fish, larvae, and planktonic organisms, although impacts are not expected cause population-level impacts. There is the potential for localised and short-term impacts to fish communities; the consequences are ranked as **Level 2**. Impacts on eggs and larvae are not expected to be significant given the temporary period of water quality impairment, and the limited areal extent of dispersant application relative to the abundance and natural variability recruitment within a given region. Impact is assessed as temporary and localised and are considered **Level 2**.
Marine Reptiles	
Exposure Evaluation	**Consequence Evaluation**
Marine turtle may occur within the operational area. However, there are no BIAs or habitat critical to the survival of the species within the operational area.	Impacts to marine turtles are not expected in relation to exposure to dispersant; the transient nature of marine turtles in the region limits their potential to be exposed to dispersant; as dispersants such as Dasic Slickgone are also not expected to persist or accumulate up the food chain (Irving & Lee 2015). Any consequences (e.g. behavioural change) would be temporary and localised, which are ranked as **Level 1**.
Marine Mammals	
Exposure Evaluation	**Consequence Evaluation**

Impact and Risk Evaluation	
Several threatened, migratory and/or listed cetacean species have the potential to occur in the operational area. The operational area also overlaps BIAs for a few cetacean species, including: • Pygmy blue whale foraging (annual high use area) • Southern right whale migration Two species of pinniped may occur in the vicinity of response activities; such as the Australian and New Zealand fur seal. There are no BIAs or biologically important behaviours for pinnipeds within the operational area.	Impacts to marine mammals are not expected in relation to exposure to dispersant; the transient nature of marine mammals in the region limits their potential to be exposed to dispersant; dispersants such as Dasic Slickgone are also not expected to persist or accumulate up the food chain (Irving & Lee 2015; AMSA 2024). In their review of dispersant impacts, Hook & Lee (2015) noted they did not review of the effects on marine mammals given dispersant use is accepted as providing a net benefit by reducing the probability of their exposure to surface oil slicks. Any consequences (e.g. behavioural change) would be temporary and localised, which are ranked as **Level 1**.

Inherent Likelihood

As discussed in Section 6.8, LOWC events, and the subsequent potential requirement for dispersant application, are historically infrequent events. Therefore, additional environmental factors would be necessary for the worst-case consequences to habitats and marine fauna to eventuate.

Due to the nature of this activity, the multiple control measures that will be in place, and based on previous occurrences, the impact is considered conceivable and could occur, however, it would require a rare combination of factors. Therefore, the inherent likelihood of the application of dispersant causing **Level 2** consequences to habitats and marine fauna is considered **Unlikely (D).**

Inherent Risk Severity

The inherent risk severity of a dispersant application causing impacts to habitats and marine fauna is considered **Low**. Table 7-12 lists the inherent risk severity for each receptor type.

Table 7-12: Inherent Risk Severity – Dispersant Application – Social Receptors – Human Systems

Receptor	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Severity
Coral	2	D	Low
Plankton	2	D	Low
Invertebrates	2	D	Low
Fish and Sharks	2	D	Low
Marine Reptiles	1	D	Low
Marine Mammals	1	D	Low

7.2.6.3 Risk: Change to the Functions, Interests, or Activities of Other Users

Inherent Consequence Evaluation

Other marine users, such as commercial fisheries and recreational users, which are active within the region have the potential to be impacted by the application of chemical dispersants into the marine environment. The physical displacement of commercial fishers from the area due to the establishment of exclusion zones during the spill response has the potential to cause a negative economic impact. However, any exclusion zone that will be established for the application of chemical dispersant will ultimately be spatially smaller than the extent of the hydrocarbon spill itself.

Toxicity exposure may result in a reduction in commercially targeted marine species (i.e. juvenile fish, larvae and invertebrate species), subsequently resulting in impacts to commercial fishing productivity. Given that embryos, larvae and juvenile fish are the most sensitive to toxicity, there is a particular risk if the timing of a spill and its response (subsea dispersant application), overlaps with the timing of a species reproduction event (i.e. a spawning event). This could lead to some component, or all of a year class of commercially targeted marine species (i.e. fish and invertebrate species) to be impacted.

The consequence evaluations for the receptors that may be within the immediate vicinity of the subsea dispersant application activities (the operational area) are shown in Table 7-13.

Table 7-13: Consequence Evaluation for Dispersant Application – Social Receptors – Human Systems

Impact and Risk Evaluation	
Commercial Fisheries	
Exposure Evaluation	**Consequence Evaluation**
Several commercial fisheries overlap the operational area, including the management areas for 6 Commonwealth-managed fisheries and 7 State-managed fisheries. The application of dispersant may impact the fisheries which target pelagic species within the water column. The fisheries which target demersal species are less likely to experience exposure, whilst some dispersant may reach the seabed, concentrations of dispersant are likely to be diluted below toxicity thresholds. The operational area covers only a small fraction of the potential fishing grounds for all species; similarly, only a small fraction of catch has the potential to be affected (see Figure 4-25 to Figure 4-32).	Any acute impacts are expected to be limited to small numbers of juvenile fish, larvae, and planktonic organisms, which are not expected to affect population viability or recruitment. Impacts from entrained exposure are unlikely to manifest at a fish population viability level. The consequence to commercial and recreational fisheries is assessed as temporary and localised, and ranked as Level 1. Refer also to: • Fish and sharks • Invertebrates.
Recreation and Tourism	
Exposure Evaluation	**Consequence Evaluation**
Recreation and tourism is also linked to the presence of marine fauna (e.g. whales), particular habitats and locations for recreational fishing.	Any impact to receptors that provide nature-based tourism features (e.g. whales) may cause a subsequent negative impact to recreation and tourism activities. However, the relatively short duration, and distance from shore means there may be temporary and localised consequences, which are ranked as Level 1. Refer also to: • Fish and Sharks • Marine mammals • Invertebrates.

Inherent Likelihood

As discussed in Section 6.8, LOWC events, and thus, the subsequent potential requirement for dispersant application, are historically infrequent events. Therefore, additional environmental factors would be necessary for the worst-case consequences to human systems to eventuate.

Due to the nature of this activity, the multiple control measures that will be in place, and based on previous occurrences, the impact is considered conceivable and could occur, however, it would require a rare combination of factors. Therefore, the inherent likelihood of the application of dispersant causing Level 2 consequences to human systems is considered **Unlikely (D).**

Inherent Risk Severity

The inherent risk severity of a dispersant application causing impacts to human systems is considered Low. Table 7-14 lists the inherent risk severity for each receptor type.

Table 7-14: Inherent Risk Severity – Dispersant Application – Social Receptors – Human Systems

Receptor	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Severity
Commercial Fisheries	1	D	Low
Recreation and Tourism	1	D	Low

7.3 Monitor and Evaluate

7.3.1 Cause of Aspect

The activities associated with monitor and evaluate that have the potential to impact marine environment are identified in Table 7-15 and described in subsections below.

Table 7-15: Monitor and Evaluate Activities that may Impact the Environment

Aspect / Phase	Activity component
Monitor and Evaluate	Vessel operations
	Aircraft operations

7.3.2 Aspect Characterisation

Several methods can be used for monitor and evaluate, including:

- vessel and aerial observations
- satellite tracking drifter buoys
- Oil Spill Trajectory Modelling (OSTM).
- weathering predictions
- vector analysis.

See the regional Offshore Victoria OPEP (VIC-ER-EMP-0001) for further details for each technique.

7.3.3 Predicted Environmental Impact and Risks

The potential impacts of vessel and aircraft operations include:

- change in fauna behaviour
- injury / mortality to marine fauna.

The techniques for monitor and evaluate response are not expected to create any additional impacts on the environment that have not already been assessed within Section 6.0 of this EP for helicopter and vessel activities that will be undertaken during the Activity.

Due to the nature and scale of these activities, the evaluation undertaken in Section 6.0 is considered appropriate for any aerial or marine surveillance that will be required for monitor and evaluate spill response activities. Thus, these impacts have not been considered further.

7.4 Protection and Deflection

7.4.1 Cause of Aspect

The activities associated with shoreline assessment and clean-up that have the potential to impact marine environment are identified in Table 7-16 and described in subsections below.

Table 7-16: Protection and Deflection Activities that may Impact the Environment

Aspect / Phase	Activity component
Protection and Deflection	Shoreline access – personnel and equipment
	Boom deployment

7.4.2 Aspect Characterisation

In the event of a spill incident with a risk to shoreline receptors, protection and deflection techniques may be implemented to identified shoreline 'protection priorities' typically located in sensitive and accessible locations.

Shoreline protection and deflection strategies include:

- Nearshore boom deployment to deflect hydrocarbons to other areas for recovery or towards an area where there will be reduced impact (compared to more sensitive sites).
- Skimming operations to recover any collected free-floating hydrocarbons.
- Sand berms (i.e. ridge of sand) can also be created across inlet openings to form a physical barrier to separate hydrocarbons from sensitive resources.

Booming and skimming operations are dependent on current, wave and wind conditions.

See the regional Offshore Victoria OPEP (VIC-ER-EMP-0001) for further details for each technique.

7.4.3 Predicted Environmental Impact and Risks

The techniques for protection and deflection will predominantly not create any additional impacts on the environment that have not already been assessed within Section 6.0 of this EP for vessel operations that will be undertaken during The Activity.

The anchoring/attachment of the nearshore boom within the nearshore water and on the shoreline, including shoreline response workers deployed to the shorelines may have an additional impact that has not been previously assessed.

The potential impacts of these activities are:

- change in habitat
- change to the functions, interests, or activities of other marine users.

7.4.4 Impact and Risk Evaluation

7.4.4.1 Risk Event: Change in Habitat

Inherent Consequence Evaluation

Shoreline response activities, such as techniques that used during protection and deflection, have the potential to impact shallow coastal areas or benthic habitats where sensitive habitats and aggregations of wildlife may be present.

The potential impacts vary, depending on the method used and the nearshore and / or shoreline habitat. A loss of vegetation may occur where equipment cannot be mobilised using existing tracks. The use of vessels and the anchoring of nearshore booms within nearshore environments has the potential to disturb sensitive near-shore estuarine habitats, such seagrass and mangrove and shoreline habitats, such as sandy beaches.

Based upon the nature of the spill events associated with this EP, and the limited area of shoreline that would likely be exposed to hydrocarbons above impact / response thresholds, impacts are likely to be highly localised around the response infrastructure. These impacts would likely result in localised medium-term impacts to species or habitats with recover over months to a year.

As such, the consequence has been ranked as a **Level 3**.

Inherent Likelihood

Given the low likelihood of a spill event occurring, and modelling scenarios which indicate shoreline exposure has a relatively low probability of occurring, this consequence is considered to have a **Remote (E)** likelihood of occurring.

Inherent Risk Severity

The inherent risk severity for this event is ranked as **Low.**

7.4.4.2 Risk: Change to Functions, Interests, or Activities of Other Marine Users

Inherent Consequence Evaluation

Shoreline response activities, such as strategies that used during protection and deflection, have the potential to cause in temporary beach closures impacting other marine users within the area. Recreational activities (such as swimming, walking, fishing, boating) in affected areas will be excluded until access is again granted by local authorities or until spill operations cease. Closure of a certain area or attraction, resulting in economic losses to the business are likely to eventuate.

As described in Section 6.8, MDO and condensate are both light non-persistent hydrocarbons, which weather rapidly. Therefore, clean-up operations are expected to take days to weeks following source control incident. As such, these impacts would likely result in localised short term impacts social receptors. As such the consequence has been ranked as a **Level 2**.

Inherent Likelihood

Given the low likelihood of the spill events occurring, and modelling scenarios which indicate shoreline exposure has a low probability of occurring, this consequence is considered to have a **Hypothetical (F)** likelihood of occurring.

Inherent Risk Severity

The inherent risk severity for this event is ranked as **Low**.

7.5 Shoreline Assessment and Clean-up

7.5.1 Cause of Aspect

The activities associated with shoreline assessment and clean-up that have the potential to impact marine environment are identified in Table 7-17 and described in subsections below.

Table 7-17: Shoreline Assessment and Clean-up Activities that may Impact the Environment

Aspect / Phase	Activity component
Shoreline Assessment and Clean-up	Shoreline access – personnel and equipment
	Shoreline clean-up
	Waste collection and disposal

7.5.2 Aspect Characterisation

Shoreline clean-up involves monitoring shorelines and/or the removal of hydrocarbons that have accumulated on the shorelines. In general shoreline clean-up tactics include:

- shoreline assessment
- shoreline clean-up:
  - manual removal (i.e., use of shovels, rakes, sieves)
  - mechanical clean-up (i.e. use of machinery
  - vacuum systems
  - low and high pressure washing / flushing
  - surf washing
  - sorbents.

See the regional Offshore Victoria OPEP (VIC-ER-EMP-0001) for further details for each technique.

7.5.3 Predicted Environmental Impact and Risks

The potential impacts of these activities are:

- change in habitat
- change in fauna behaviours
- change to the functions, interests, or activities of other marine users.

7.5.4 Impact and Risk Evaluation

7.5.4.1 Risk: Change to Habitats

Inherent Consequence Evaluation

The potential impacts of shoreline response activities will vary, depending on the nature and scale of the spill incident, the method used, and the nearshore/shoreline habitat impacted.

As condensate and MDO are both light, non-persistent hydrocarbons, they will weather rapidly once released to the marine environment. Only a small fraction comprising persistent residuals will remain. Under low energy conditions, the residual components may form a thin liquid sheer on the coast and may persist in the environment; this may allow them to be physically removed.

The shorelines within the EMBA, particularly those close to the activity location and at higher probability of exposure, are predominantly rocky shore platforms backed by sheer rocky cliffs interspersed with sandy beaches. Rock platforms and cliffs/headlands are low sensitivity habitats and often inaccessible. Natural recovery methods are most effective, safe and feasible for these habitat types. For exposed rocky shores or exposed wave-cut platforms any oil residue deposited is rapidly removed from exposed faces and clean-up is usually not required (NOAA, 2013). Shoreline clean-up typically is only considered for sandy beaches that may be affected by hydrocarbon residues. As with all spill response activities, this strategy will only occur if a net benefit has been established via the completion of a NEBA.

Based upon the low viscosity, it is possible that MDO and condensate will infiltrate porous shorelines (such as sandy beaches) where it washes onshore rapidly and has not significantly weathered. Consequently, mechanical recovery may be required upon completion of a NEBA, which may result in the excavation of shorelines. If not done correctly, any excavation of hydrocarbon contaminated materials along the coast could exacerbate beach erosion to a point where its recovery longer term recovery.

Based upon the potential for localised medium-term impacts to shoreline habitats, the consequence has been ranked as **Level 3**.

Inherent Likelihood

Given the low likelihood of the spill events occurring, and modelling scenarios which indicate shoreline exposure has a low probability of occurring, this consequence is considered to have a **Remote (E)** likelihood of occurring.

Inherent Risk Severity

The inherent risk severity for this event is ranked as **Low**.

7.5.4.2 Risk: Change in Fauna Behaviours

Inherent Consequence Evaluation

The use and movement of vehicles, equipment and personnel during shoreline response activities can directly disturb marine fauna including important or sensitive habitats, such as nests of turtles and birds and bird roosting areas. Shoreline clean-up may require strategies which physically remove of substrates, or cause erosion by responder access, could directly impact marine fauna and their habitats. Furthermore, the noise disturbance created by shoreline clean-up activities could potentially disturb the feeding, breeding, nesting or resting activities of resident and migratory fauna species that may be present (such as shorebirds and seabirds).

On the basis that these disturbances could cause medium term impacts to local populations of shorebirds and seabirds, the consequence has been ranked as **Level 3**.

Inherent Likelihood

Given the low likelihood of the spill events occurring, and modelling scenarios which indicate shoreline exposure has a low probability of occurring, this consequence is considered to have a **Hypothetical (F)** likelihood of occurring.

Inherent Risk Severity

The inherent risk severity for this event is ranked as **Low.**

7.5.4.3 Risk: Change to the Functions, Interests, or Activities of Other Marine Users.

Inherent Consequence Evaluation

The presence of hydrocarbons on shorelines, and the associated clean-up operations, depending on location, may lead to temporary beach closures. Any recreational activities present in affected areas (such as swimming, walking, fishing, boating) will be excluded until access is again granted by local authorities.

Closure of a certain area or attraction, resulting in economic losses to the business are likely to eventuate. The shorelines within the EMBA, particularly those close to the activity location and at higher probability of exposure, are predominantly isolated, unpopulated, and remote rocky shore platforms backed by sheer rocky cliffs.

The presence of shoreline clean-up operations along a shoreline has the potential to reduce the visual amenity of known heritage sites along the coastline, subsequently potentially impacting the value of the site to First Nations people.

As described in Section 6.8, MDO and condensate are both light non-persistent hydrocarbons, which weather rapidly. As such, these impacts would likely result in localised short term impacts social receptors. As such the consequence has been ranked as a **Level 2**.

Inherent Likelihood

Given the low likelihood of the spill events occurring, and modelling scenarios which indicate shoreline exposure has a low probability of occurring, this consequence is considered to have a **Hypothetical (F)** likelihood of occurring.

Inherent Risk Severity

The inherent risk severity for this event is ranked as **Low**.

7.6 Oiled Wildlife Response

7.6.1 Cause of Aspect

The activities associated with oiled wildlife (OWR) have the potential to impact marine environment are identified in Table 7-18 and described in subsections below.

Table 7-18: Oiled Wildlife Response Activities that may Impact the Environment

Aspect / Phase	Activity component
Oiled Wildlife Response	Secondary OWR activities (disturbance)
	Tertiary OWR activity (handling / treatment)

7.6.2 Aspect Characterisation

OWR has the potential to cause impacts to marine fauna. Activities associated with the response that can cause impacts to marine fauna include:

- primary response:

  - Spill response strategies to prevent exposure of hydrocarbons to wildlife.
- secondary response:
  - Hazing (i.e., deterrence of wildlife away from the hydrocarbon spill).
  - Pre-emptive capture (i.e., isolation and / or capture and relocation of wildlife away from contaminated areas to unaffected areas).
- Tertiary response:
  - capturing
  - cleaning
  - rehabilitation
  - transportation
  - stabilisation for release.

See the regional Offshore Victoria OPEP (VIC-ER-EMP-0001) for further details for each technique.

7.6.3 Predicted Environmental Impact and Risks

The potential risk associated with oiled wildlife response are:

- disturbance / injury / mortality to marine fauna.

7.6.4 Impact and Risk Evaluation

7.6.4.1 Risk: Disturbance / Injury / Mortality to Marine Fauna

Inherent Consequence Evaluation

OWR activities have the potential to disrupt marine fauna.

Activities such as hazing involves the use of visual, auditory or sensory deterrents to keep healthy marine fauna away from the hydrocarbon spill. This can lead to disturbance of marine fauna away from known congregation, resting, feeding, breeding or nesting areas which may have a short- or long-term impact on the survival of that group if cannot access preferred resources. This can lead to disturbance of marine fauna, such as the separation of groups or adults/juveniles, collisions with marine fauna, inadvertent movement of animals into the oiled area, or scattering of oiled animals

Pre-emptive capture involves the capture and relocation of marine fauna before they become oiled. Potential impacts include relocation to inappropriate areas that will not support the animal's requirements (e.g. habitat, food sources).

Inappropriate capturing and incorrect handling of marine fauna by untrained personnel may cause distress, injury and death to the individual. To prevent this, only State Control Agency authorised oiled wildlife responders will approach and handle fauna. This will eliminate any handling impacts to fauna from untrained personnel and reduce the potential for distress, injury or death of a species.

Due to the potential for localised short-term impacts to species / habitats of recognised conservation value but not affecting local ecosystem functioning, the potential impacts form this activity have been identified as **Level 2**.

Inherent Likelihood

Given the low likelihood of a spill event occurring, and modelling scenarios which indicate shoreline exposure has a relatively low probability of occurring, this consequence is considered to have a **Remote (E)** likelihood of occurring.

Inherent Risk Severity

The inherent risk severity for this event is ranked as **Low**.

7.7 Control Measures, ALARP, and Acceptability Assessment

Table 7-19 provides a summary of the control measures and ALARP and acceptability assessment relevant to spill response strategies.

Additional source control ALARP considerations are included in Table 7-19.

Table 7-19: Spill Response ALARP, Control Measures and Acceptability Assessment

Spill response strategies	
ALARP Decision Context and Justification	**ALARP Decision Context: Type A** The spill response measures described in this plan are standard practice for marine oil spills. There is a good understanding of potential impacts and risks from the response techniques, and the control measures required to manage them. There is little uncertainty associated with the potential environmental impacts and risks, evaluated as Level 3 due to the small disturbance footprint expected with the response techniques. No objections or concerns were raised during consultation regarding this activity or its potential impacts and risks. As such, Amplitude Energy considers ALARP Decision Context A should apply.
Control Measure	**Source and Description of Control**
CM10: Amplitude Energy Offshore Chemical Assessment Procedure	All planned chemical discharges shall be assessed and deemed acceptable before discharge, in accordance with Amplitude Energy's Offshore Environment Chemical Assessment Process.
CM24: SCERP	Source control capability is maintained in accordance with the SCERP. Source control response activities will be implemented in accordance with the SCERP.
CM25: OPEP	Emergency spill response capability is maintained in accordance with the OPEP. Emergency response activities will be implemented in accordance with the OPEP.
CM26: OSMP	Operational and scientific monitoring will be implemented in accordance with the OSMP.
Impact and Risk Summary	
Residual Impact Consequence	N/A
Residual Risk Consequence	**Level 2** - Localised short-term impacts to species or habitats of recognised conservation value not affecting local ecosystem function; remedial, recovery work to land, or water systems over days/weeks.
Likelihood	The likelihood of LOWC event requiring source control response such as dispersant application is determined to be Unlikely (D) (Section 6.8). As

Spill response strategies	
	such, the likelihood of impacts from response activities have been assessed as: • **Unlikely (D) -** A rare combination of factors would be required for an occurrence. Conceivable and could occur at some time. Could occur during the activity.
Residual Risk	Low
Demonstration of Acceptability	
Principles of ESD	The potential impact associated with this aspect is limited to a localised short-term impact, which is not considered as having the potential to affect biological diversity and ecological integrity. The activities do not have the potential to result in serious or irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required.
Legislative and Conventions	Legislation and other requirements considered as relevant control measures include: • OPGGS Act • EPBC Act 1999 and EPBC Regulations 2000 • Emergency Management Act 2013 (Victoria) • Wildlife Act 1975 (Victoria) • NOPSEMA/AMSA Australian Dispersant Selection Process Explanatory Note. If required for response activities - Amplitude Energy anticipates using dispersants listed on the National Plan OSCA register. • NOPSEMA Oil Pollution Risk Management Paper, including the following guidance: – During the planning phase consider characterisation of hydrocarbons and dispersant efficacy testing. For this Activity hydrocarbons properties are predicted to be primarily gas with a small proportion of condensate on the basis of hydrocarbons produced from the same formations in the same region. Several dispersants available on the OSCA register are identified as possibly effective on light oils. Dispersant use is a safety control measure only (to reduce VOCs at surface). – Demonstration of ALARP response planning, to include controls such as dispersant selection process, application zones and monitoring. For the current campaign - each of these controls are provided for within the performance standards outlined below. – An evaluation of the impacts and risks should be provided and demonstrate that they will be reduced to ALARP and be of an acceptable level. • Oil Spill Response Technical Guidelines: The adopted controls have been guided by the following technical guides: – Wildlife Response Preparedness (IPIECA 2014). – State Maritime Emergencies (non-search and rescue) Subplan (State of Victoria, Department of Transport, 2021). • OPGGS(E)R 2009 – Amplitude Energy Offshore Vic OPEP, OSMP.

Spill response strategies	
Internal Content	Relevant management system processes adopted to implement and manage hazards to ALARP include: • Risk Management (MS03) • Technical Management (MS08) • Health Safety and Environment Management (MS09) • Incident and Crisis Management (MS10) • Supply Chain and Procurement Management (MS11) • External Affairs & Stakeholder Management (MS05) • Operations Management (MS07)
External Context	Suggestions from State emergency agencies have been adopted unless otherwise discussed and agreed. During consultation on this and other recent environment plans it was confirmed that First Nations peoples should be involved in any spill clean-up response on their Country; and should be contacted to provide advice on cultural matters in the event of a spill encroaching on shorelines. This was reiterated in our webinar, a recording of which is on our website, and re-affirmed during consultation with GLaWAC (Event ID 2025 0828 141512 7349). Amplitude Energy retains contact details of First Nations organisations to be contacted in the event of a spill, noting Traditional Owners may alternatively be engaged by the State Control Agency. This has become standard in our emergency response planning. No concerns have been raised to date during consultation regarding impacts and risks from chemical discharges during planned activities, nor have any stakeholders raised any questions or concerns in relation to the use of dispersants for operational purposes during spill response. As such, Amplitude Energy considers that there is broad acceptance of the impacts associated with the activity.
Demonstration of meeting the defined acceptable levels in the OPP	Impacts and risks associated with the Activity are expected to be below the defined acceptable levels as described in the OPP by meeting the additional acceptability criteria described in Section 5.2.4.3, such as that for oil spill response: • OPP EPOs and EP EPOs are equivalent (refer Appendix 1 - , Table 10-1). • OPP control measures and EP control measures are equivalent (refer Appendix 1 - , Table 10-2). • Consequence, likelihood and residual risk are the same as those defined in the OPP. • No changes to internal or external context as defined in the OPP including no additional objections and claims were raised against this aspect.
Acceptability Outcome	**Acceptable** Amplitude Energy has determined that impacts and risks related to dispersant application response are acceptable, based on: • The planned management of impacts and risks integrates Amplitude Energy internal requirements, including relevant management system processes.

Spill response strategies	
	• The activities will be managed in a way that is not inconsistent with the relevant principles of ESD. • The proposed controls and impact and risk levels are not inconsistent with national and international standards, laws, and policies including applicable plans for management and conservation advices, and significant impact guidelines for MNES. • No feedback has been received from relevant persons that has informed the values and sensitivities /existing environment, impacts and risks, performance outcomes or mitigation measures To manage impacts to receptors to or below the defined acceptable levels the following EPOs have been applied: • EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment.

Table 7-20: Source Control ALARP Evaluation

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
Risk Avoidance						
Do not undertake activity.	Moderate Risk. Worst Case LOWC.	Deferral / avoidance of other (relatively minor impacts and risks associated with the activity).	No. As operator and Titleholder there is an obligation to develop resources within that Title in accordance with the Act and work programs.	Infrastructure for future gas resources not developed. Increased pressure on east coast domestic gas supply.	Meeting east coast gas demand would require other means of gas supply and development elsewhere.	Reject Rationale: Amplitude Energy has an obligation to develop reserves from the Title Areas under their operation. Amplitude Energy has a track record of safely developing and operating gas developments in the region.
Response Preparedness						
Build or purchase Capping Stack and (pre-position) have on Standby.	As above.	May allow for reduction in response time model by approx. 19 days where combined with standby vessel (Table 7-6 – time required to mobilise rental capping stack additional to other RTM elements) Risks may be reduced from Moderate to Minor.	No. Not typical in the offshore industry in Australia. Typically, where confirmed as a feasible option, operators sign up to a capping stack accessible from overseas. Stacks are strategically placed around the globe to enable rapid deployment to other regions. Capping unlikely to be feasible for Otway wells.	$2 - $20MM. Build times likely to be 1-2 years. ($2MM is to build a category 1 cap with capability to plug and kill the well but limited or no intervention capability), cost increases with complexity including ability to intervene post capping to estimated $20MM. Considerable time (1-2yrs) and resources required to commission and	No significant introduced risks.	Reject Rationale: Provides no additional benefit over the capping provisions integrated into the project. Provides small reduction in time to cap compared to utilising industry capping solution but at significant additional cost and resource burden. Costs are considered to be grossly disproportionate to the potential reduction in environmental risks.

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
				fabricate bespoke capping stack for the project and then maintain near to field.		
Maintain Agreement with Capping Stack provider	As above	Mobilisation time is reduced. Note RTM is based on mobilisation times advised by third party provider and hence reflect 'ready to deploy status'. Risks reduced but remain Moderate.	Not typical in the Otway. Capping unlikely to be feasible. Services are available and utilised by multiple operators for suitable projects.	Administrative costs Approx. $500K to sign-up to capping stack in 'ready to deploy status'. This is not proposed for Otway drilling given likely not a feasible option. Capping stack sent by air freight, e.g. from Scotland to Melbourne, loadout to Port of Melbourne (or similar) and sail to site.	No significant introduced risks.	Implement Rationale: Maintains relationship with capping stack provider. Potentially reduction in time to control source though given high initial WCD flow profiles and risks is within the Moderate category. Costs are not grossly disproportionate to the potential environmental risk reduction. Integrated via: OPEP C8 Source Control Emergency Response Equipment
Mobilise capping stack vessel to standby in region.	As above.	Combined with a local capping stack, having a vessel available on standby ready to deploy a stack has the potential to reduce response times by approx. 19 days depending on survey, debris clearance and	No. Not typical in the offshore industry in Australia. Typically, operators will source vessels as needed either vessel of	Estimated > $5MM for the duration of the campaign plus $2 - $20MM for the capping stack on standby in the region.	No significant introduced risks.	Reject Rationale: Any time saving with this option is unlikely to achieve capping before tapering of the high initial WCD flow rate. Costs are considered to be grossly disproportionate to the potential reduction in environmental risks.

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
		intervention (operations which would be initiated in the first instance). Risks may be reduced from Moderate to Minor.	opportunity or via MoU. Capping unlikely to be feasible for Otway wells.			
Relief well MODU, services and equipment on standby in the region.	As above	This option could remove a significant proportion of time associated with the RTM MODU activation phase and transit phase (between 9 and 47 days) depending on options available on the day. Time to drill a relief well remains > 40 days by which time the well flow is predicted to have peaked and shoreline contact occurred (noting intervention and capping attempts to stop flow in the interim). Volume of oil ashore and risks would be reduced but would remain Moderate.	No. Not typical in the offshore industry in Australia. Typically, operators will plan to source vessels as needed either vessel of opportunity or via MoU. Wells complexity assessment shows well can be drilled with typical MODU.	Estimated > $50MM for the duration of the campaign. Increased workload on project team to coordinate / maintain through critical planning and execution phases.	Operational environmental impacts and risks and safety risks at standby location. Increase biosecurity risks having MODU on standby.	Reject Rationale: Any time saving with this option would not achieve source control before either intervention/ capping or prevent high initial WCD flow rate and associated shoreline accumulation. The significant costs and planning burden are considered to be grossly disproportionate to the potential environmental risk reduction.
Wait to undertake project at a time when a	As above.	This option could remove a significant proportion of time associated with	No. Not typical in the offshore industry in	Committing to only undertaking drilling when a MODU is in	Exceedance of deadlines set in General Direction 824.	Reject Rationale: Any time saving with this option would not achieve source

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
MODU is drilling in the region and could support a relief well.		the RTM MODU activation phase and transit phase (between 9 and 47 days) depending on options available on the day. Time to drill a relief well remains > 40 days by which time the well flow is predicted to have peaked and shoreline contact occurred (unless intervention is successful in the interim). Volume of oil ashore and risks would be reduced but would remain Moderate.	Australia. Typically, operators will plan to source MODU as needed e.g. via industry MoU or directly with MODU operators. The well complexity assessment shows well can be drilled with typical MODU.	the region would severely restrict operational flexibility and would (likely) lead to the exceedance of decommissioning deadlines set in General Direction 824.		control before tapering of the high initial WCD flow rate and associated shoreline accumulation. The significant costs, planning burden and risk to regulatory deadlines are considered to be grossly disproportionate to the potential environmental risk reduction.
Incorporation of an Emergency shut-in Device, such as a KBOS or equivalent, into the engineering design.	As above	This option provides an additional independently operated barrier and shut-in device that could be operated in the event of a LOWC. If existing primary, secondary, and tertiary well control systems fail (this is unlikely), KBOS or similar system would provide additional redundancy, reducing the likelihood	No. Not typical in the offshore industry in Australia. The option has been considered by a few operators; however, no operator has installed the device within Australian waters.	Engineering / modelling would be required to determine suitability. Additional costs associated with the device. Capex ~7M. Plus additional costs to integrate into the BOP. Additional time to install the device.	The additional height and weight of certain Emergency shut-in Devices (~5.5m and ~120MT for MCD) which may require additional tethering to prevent fatigue if possible. Additional units would also be required on the seabed.	Reject Rationale: The significant logistical and economic costs are considered to be grossly disproportionate to the potential risk reduction achieved given the multi-level well control strategies that are already being implemented to prevent a loss of well control that reduce risks to ALARP. Installation of an additional closure device adds significant complexity to the BOP system and would not

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
		of LOWC incident impacting the shoreline, though would not eliminate the risk, or the need for a suitably resourced source control response.		Lead time to build, deliver and install excessive and not practical within project timeframe.	Additional equipment footprint on seabed (relatively minor) Never before installed with the planned BOP type; this has the potential to introduce compatibility and functionality issues within the existing well control systems.	significantly reduce the likelihood of a protracted LOWC.
Pre-drill relief well top holes for the existing and development well sites.	As above.	Estimated time saving of 2.3 days if section pre-drilled and conductor cemented. Unless combined with a MODU being on standby this option is not considered to provide significant benefit, noting time to move the MODU and drill the remaining well would still exceed the peak well flow period. The is also a real risk that the top-hole location would no longer appropriate or safe depending on the	No. Not typical in the offshore industry in Australia.	Estimated at $49MM just to mobilise MODU and drill top hole for the relief well. Plus $5MM+ to cut and recover wellheads at the end of campaign. Increased workload on project team to coordinate.	Increased SIMOPS Risk, Drilling risks. Operational Environmental Impacts and Risks. Safety Risks.	Reject Rationale: Any time saving with this option would not achieve source control before tapering of the high initial WCD flow rate and associated shoreline accumulation. Costs are considered to be grossly disproportionate to the potential reduction in environmental risks.

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
		scenario and conditions offshore.				
Maintain complete inventory (all materials and consumables) to drill relief well.	As above.	Ensures no equipment or consumables are critical path to drill a relief well. Unlikely to significantly reduce times unless combined with MODU being on standby, noting well site services and equipment are available through the APPEA MoU. Otway relief well can utilise standard equipment. Slight reduction in risk.	No. Not typical for individual operators to maintain their own inventory to drill a relief well unless undertaking well construction project where they may have spares available and/or complex wells.	Estimated at > $10MM to purchase + $0.75MM to store and maintain per annum. Increased workload on project team to maintain.	Yard HSEQ risks. Consumable expiry / maintenance.	Reject Rationale: Any time saving with this option would not achieve source control before tapering of the high initial WCD flow rate and associated shoreline accumulation. Costs are considered to be grossly disproportionate to the potential reduction in environmental risks.
Long leads: Purchase and maintain inventory of casing to drill relief well.	As above	Ensures these long leads are not critical path to drill a relief well. Unlikely to significantly reduce times unless combined with MODU being on standby, noting well site services and equipment are available through the APPEA MoU. A relief well within the Otway Basin can utilise standard equipment. Slight reduction in risk.	No. Not typical for individual operators to maintain their own inventory to drill a relief well unless undertaking well construction project where they may have spares available and/or complex wells.	Estimated at > $5MM to purchase + $0.5MM to store and maintain per year. Increased workload on project team to maintain.	Yard HSEQ risks.	Reject Rationale: Any time saving with this option would not achieve source control before tapering of the high initial WCD flow rate and associated shoreline accumulation. Costs are considered to be grossly disproportionate to the potential reduction in environmental risks.

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
Long leads: Purchase and maintain wellhead and conductor.	As above	Ensures these long leads are not critical path to drill a relief well. Unlikely to significantly reduce times unless combined with MODU being on standby, noting well site services and equipment are available through the APPEA MoU. Otway relief well can utilise standard equipment. Slight reduction in risk.	No. Not typical for individual operators to maintain their own inventory to drill a relief well unless undertaking well construction project where they may have spares available and/or complex wells.	Estimated at >$2MM to purchase, + 0.1MM to store and maintain per year. Increased workload on project team to maintain.	Yard HSEQ risks.	Reject Rationale: Any time saving with this option would not achieve source control before tapering of the high initial WCD flow rate and associated shoreline accumulation. Costs are considered to be grossly disproportionate to the potential reduction in environmental risks.
Project vessel or MODU available with ROV and subsea intervention tooling, during well activities.	As above.	ROV available on the project provides the quickest means of implementing this response aspect. Likely to offer quickest response (within hours/days). Supports a shift in risk from Moderate to Minor.	Industry practice is currently to sign up to industry debris clearance package which can be transported to site in approx. 7 days and to source vessel of opportunity.	Typically captured in vessel rates / designed into the Activity.	No additional risk.	Implement. Provides means to immediately progress source control. Potentially significant reduction in time to control the well, may help prevent significant volumes of oil reaching the ocean and shorelines and therefore reduce consequence and overall risk from moderate to minor. Costs are currently integrated into current project design via project vessel and equipment selection and are not grossly disproportionate to the environmental risk reduction. Integrated via:

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
						OPEP C8 Source Control Emergency Response Equipment
Access to shared industry subsea intervention toolkit.	As above.	Project equipment does not include complete debris clearance package, dispersant or dispersant application equipment. Required to support implementation of OPEP strategies. Reduction of risks if successful though likely to remain in the moderate category overall. Dispersant component unlikely to be required.	Yes, if project equipment is not available.	Approx. $400K for duration of campaign.	No introduced risks	Implement (debris clearance component). Rationale: Debris clearance equipment may be needed to access the well. Costs are not grossly disproportionate to the potential environmental risk reduction. Dispersant and associated equipment unlikely to be required. Integrated via: OPEP C8 Source Control Emergency Response Equipment
Industry MoU for Mutual Aid for offshore incident.	As above.	This could provide quickest access to a relief well MODU. Time to make well safe may add approx. 3-days to overall activation timeframe before transit phase. Time to drill a relief well remains > 40 days by which time the well flow is predicted to have peaked and shoreline contact occurred.	Yes. Industry initiative commonly adopted. Likely to provide the quickest possible timeframe to implement source control response. MoU for Mutual Aid: "To Facilitate the Release and Transfer of Drilling Units and Well-Site	Costs upon activation. In accepting a MODU from another operator the recipient is liable for the costs incurred by that operator, which are difficult to quantify but could be significant, nominally $50M to re-instate	No introduced risks.	Implement. Rationale: likely to provide the quickest means to drill relief well. Though relief well drilling does not reduce risks below the moderate level, a relief well would reduce overall volumes released and eliminate any legacy issues (e.g. due to recharge). Costs upon activation are not grossly disproportionate to the environmental risk reduction. Integrated via:

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
		Risks remain Moderate.	Services between Operators in Australian and Timor-Leste-administered Waters in preparedness for an offshore incident". This includes: a) Drilling Unit; and/or b) to the extent suitable for use in connection with the Offshore Incident, third party contractor personnel, equipment, materials, consumables and other well-site services (including, but not limited to, logistical support, cementing, well intervention and vessel support used in connection with such Drilling Units (collectively, "Well-Site Services").	their drilling campaign.		OPEP C8 Source Control Emergency Response Equipment

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
Monitoring of drilling inventories available including through AEP MoU for the purposes of drilling relief well.	As above.	Verification of available inventory which can be reflected in RTMs to identify and address potential bottlenecks. Slight reduction in risk.	Yes, good practice to verify and to reflect in RTMs.	Administrative effort only.	No additional risk.	Implement. Rationale: identifies potential bottlenecks to relief well drilling prior to and during drilling to then consider alternate arrangements. Though relief well drilling does not reduce risks below the moderate level, a relief well would reduce overall volumes released. Costs of this option are not grossly disproportionate to the environmental risk reduction. Integrated via: OPEP C8 Source Control Emergency Response Equipment OPEP C9 Source Control Response Resources Monitoring.
MODU / Vessel contract tracking and forecasting via Vessel brokerage monthly (during drilling) MODU / vessel updates and/or participation with DISC.	As above	Save approximately 1-2 days in identifying suitable/ready MODUs and vessels. Slight reduction in risk.	Yes. Industry initiative commonly adopted.	Minor administrative costs.	No additional risk	Implement. Rationale: maintains awareness of vessels and MODU's capable of supporting a source control response providing a small reduction in overall response times. Costs are not grossly disproportionate to the environmental risk reduction. Integrated via: OPEP C9 Source Control Response Resources Monitoring
Source Control Contingency	As above	Clear response plans, allowing basis for	Yes. Required. APPEA DISC	Estimated $100K	No additional risk	Implement.

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
Response Plan developed, tested and utilised in the event of a source control incident.		managing the source control response to best case timeframes on the day. Risks reduced but remain Moderate.	provides content guidelines.			Rationale: Enables source control strategies to be clearly communicated and expedited. Costs are not grossly disproportionate to the environmental risk reduction. Integrated via: C6 Source Control Emergency Response Planning
WOMP which provides for source control activities.	As above	Saves time and personnel resources during a response. Can be completed during the planning phase avoiding significant rework of plans in the event of a source control response. Slight reduction in risk.	Yes	Estimated $100K	No additional risk	Implement. Rationale: Assists in source control strategies being clearly communicated and expedited. Costs are not grossly disproportionate to the environmental risk reduction. Integrated via: C6 Source Control Emergency Response Planning
Amplitude Energy to maintain contracts with well control specialists.	As above	This could save days required to contract required resources. Risks reduced but remain Moderate.	Yes. All operators rely on contractors for ramp-up support.	Estimated $100K	No additional risk	Implement. Rationale: Enables source control strategies to be expedited. Costs are not grossly disproportionate to the environmental risk reduction. Integrated via: C7 Source Control Emergency Response Personnel
Pre-Mobilisation of Relief Well (Source Control)	As above	This could save days required to form the broader source control team. May be of limited	No. All operators rely on contractors	Estimated > $100K/day (> $10MM	No additional risk	Reject. Rationale: A contingent of source control personnel are obtained

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
Personnel prior to drilling.		benefit considering expertise to commence a response are already available in the project team and ramp up via project and emergency response contractors. Slight reduction in risk.	for ramp-up support as needed.	for the duration of the campaign).		though service providers who are also available to support other companies and projects in emergency conditions. Mobilisations can occur quickly, and advice sought remotely in the interim, such that time savings (if any) are likely minimal. Costs are considered to be grossly disproportionate to the potential reduction in environmental risks.
Relief Well (Source Control) personnel resourcing plan in place prior to drilling.	As above	Of benefit to identify where resources would be coming from / key contacts and roles. Slight reduction in risk.	Yes	Estimated $20K. Mapped out as part of the SCERP.	No additional risk	Implement. Rationale: Enables source control strategies to be expedited. Costs are not grossly disproportionate to the environmental risk reduction. Integrated via: C7 Source Control Emergency Response Personnel
Pre-identify a quadrant for suitable relief well locations.	As above	Assists in making decision on the area for optimal location for relief well based on weather conditions and subsea hazards. Risks reduced but remain Moderate.	Yes	As part of nominal relief well plans.	No additional risk	Implement. Rationale: Enables source control strategies to be expedited. Costs are largely accounted for through existing project planning work and are not grossly disproportionate to the environmental risk reduction. Integrated via: C6 Source Control Emergency Response Planning

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
Nominal mooring analysis for drilling in field from moored MODU.	As above.	Mooring analysis completed for the Otway Field. Additional analysis completed prior to drilling, targeted at the well location. Note: A site survey will be required at the time of LOWC to confirm location position and a new mooring analysis will be completed for the selected rig. Risks reduced but remain Moderate.	Not typical for solely for relief well purposes.	Already available to project. Mooring analysis completed as part of campaign preparations.	No additional risk.	Implement
Pre lay of relief well MODU moorings.	As above	May save 2-3 days, only if laid in correct locations. Locations may change at the time depending on scenario and offshore conditions. Risks reduced but remain Moderate.	Not typical for solely for relief well purposes.	Estimated > $2.5MM.	Additional impacts to seabed. Additional Risk to other sea users if RW outside existing exclusion zones (fisheries snag risk).	Reject. Rationale: Any time saving with this option would not achieve source control before tapering of the high initial WCD flow rate and associated shoreline accumulation. Significant additional costs and project planning capacity are considered to be grossly disproportionate to the potential environmental risk reduction.
Pre-accepted safety case revision for possible relief well MODUs and	As above	Time saving and may assist in developing relationship with MODU operator. Multiple variables mean a particular MODU may	No, no known examples of an accepted SCR specifically for a	Estimated $500K + Regulator Levies. Increased workload on project team during critical	No, no known examples of an accepted SCR specifically for a relief well MODU and vessels.	Reject. Rationale: Any time saving with this option would not achieve source control before tapering of the high

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
source control vessels.		not be available on the day, hence SCR of no benefit but significant effort and cost. MODU's / vessels for which safety cases were developed may not be available at the time, hence industry has utilised the MoU model which generally allows access to a range of MODUs and well site services. No risk reduction afforded.	relief well MODU and vessels.	planning and execution phase.		initial WCD flow rate and associated shoreline accumulation. MODUs and response vessel availability will change with time; facilities may be unavailable or may not be the most expedient option to support a response at the time one may be needed. There is a significant risk of wasted planning effort where directed at a single facility. There is also a risk of obscuring optimal (most expedient) options to drill a relief well where plans become tailored to a particular option. Costs are considered to be grossly disproportionate to the potential reduction in environmental risks.
Prepare outline safety case revision for MoU MODU prior to drilling.	As above	Unlikely to accelerate SCR times significantly noting that MODU selection is uncertain until the time of the event. There are pre-exiting safety cases which provide a basis for format. Major part of development of SCR is workforce engagement with the service partners for the scope, which is based on the MODU	Not typical but at least one example of this recently.	Estimated $100K. Increased workload on project team during critical planning and execution phase.	No additional risk.	Reject. Rationale: Any time saving with this option would not achieve source control before tapering of the high initial WCD flow rate and associated shoreline accumulation. MODUs and response vessel availability will change with time; facilities may be unavailable or may not be the most expedient option to support a response at the time one may be needed. There is a significant risk of wasted planning effort where

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
		selected at the time. No risk reduction afforded.				directed at a single facility. There is also a risk of obscuring optimal (most expedient) options to drill a relief well where plans become tailored to a particular option. Costs are considered to be grossly disproportionate to the potential reduction in environmental risks.
Contract in place for Safety Case Expertise to expedite development.	As above	Accelerates preparation times noting personnel familiarity with Titleholder systems, processes and field. Slight reduction in risk.	Yes	No additional burden	No additional risk	Implement. Rationale: Enables source control strategies to be expedited. Costs are not grossly disproportionate to the environmental risk reduction. Integrated via: C7 Source Control Emergency Response Personnel
In the event a suitable MODU not available through APPEA MoU, prepare mobilisation plan for nominal MODU outside of Australia.	As above	Identifies pathway to bring suitable MODU for relief well drilling into Australia and to the region. Some reduction in risk but remains Moderate.	Good practice as part of relief well planning.	Estimated $100K as part of relief well planning.	No additional risk	Implement. Rationale: Assists in expediting source control strategies. Costs are not grossly disproportionate to the environmental risk reduction. Integrated via: C10 Source Control Response Logistics
Identify pathway for biosecurity clearance of a nominal MODU and vessels from	As above.	Time saving (accelerated biosecurity clearance) and reduction in HSEC risk - MODU able to	Yes, if MODU known.	Estimated $100K	Additional time for project team to maintain MODU/vessels in ready-to go state.	Implement Rationale: Assists in expediting source control strategies. Costs are not

Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion
southeast Asia prior to commencing well drilling.		mobilise directly to well site.				grossly disproportionate to the environmental risk reduction. Integrated via: C10 Source Control Response Logistics
Invasive Marine Species (IMS) Risk Assessment (RA) of most suitable relief well MODU prior to drilling (and updated if MODU changes).	As above.	Assists in identifying IMS actions to be completed during mobilisation. Reduces risk of IMS transfers if mobilised. Only of benefit if MODU is known/contracted otherwise of no value.	Standard practice in the prequalification phase.	Estimated $10K.	Additional time for project team to maintain IMS assessment.	Implement. Rationale: Assists in expediting source control strategies. Costs are not grossly disproportionate to the environmental risk reduction. Integrated via: C10 Source Control Response Logistics

8.0 First Nations Cultural Heritage Values and Sensitivities

This section evaluates the potential for Activity activities to affect cultural heritage and the continuation of cultural practices. In doing so, this section:

Identifies the potential impacts to environment receptors that are, or are linked to, cultural features of the environment that could be affected by Activity aspects (Section 8.1).

Summarises the outcomes of the impact and risk assessments (from Section 6.0) for environment receptors that are also cultural features, or are linked to cultural features of the environment, to characterise the relevant Activity aspects (Section 8.2).

Evaluates to what degree the cultural features of the environment, and their value to first nations cultural practices and heritage, could be degraded considering the nature and scale of impacts / risk to relevant environment receptors (Section 8.3).

Environmental Performance Outcomes (EPO's) have been developed for this Activity that are specific to First Nations peoples cultural heritage (Section 8.4). These EPOs are designed to be equal to or better than the acceptable levels of impact and risk: No impact to underwater cultural heritage

Further, there are measures evaluated and adopted following research, training and consultation, to ensure acceptable levels are not exceeded and that impacts and risks are managed to ALARP.

The section has been written with consideration to N-04750-GN1344 A339814 (NOPSEMA 2024) and First Nations vocabulary: using culturally appropriate language and terminology (APSC 2022), First Nations people's Country Plans[11], Consultation with First Nations peoples, participation in cultural experiences, and training led by Gunditjmara people on Gunditjmara Country.

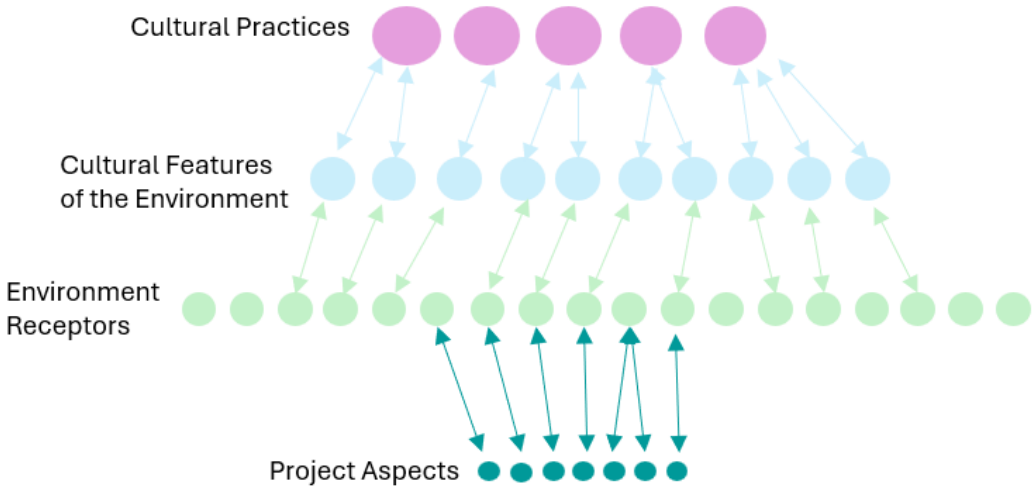


Figure 8-1: Receptors, and links to Cultural Features and Practices

[11] Gunditj Mirring Traditional Owners Aboriginal Corporation 2023; Wadawurrung Traditional Owners Aboriginal Corporation, 2020; Gunaikurnai Whole-of-Country Plan (Gunaikurnai Land and Waters Aboriginal Corporation 2015); Eastern Maar Aboriginal Corporation, 2014.

8.1 Summary of Potential Impacts to Cultural Features

Table 8-1 describes how relevant aspects of the Activity could impact tangible and intangible cultural features. Importantly, this is not a description of predicted impacts, but of the mechanisms by which an Activity aspect could affect a tangible or intangible cultural feature and its value for to First Nations people. Within In this section, environment receptors, that are also cultural features, that were identified through consultation for Amplitude Energy activities in the Otway, including Otway Operations (Otway Offshore Operations Environment Plan) and the Athena Supply Project (Athena Supply Project) as having particular value to First Nations peoples, have been considered. These cultural features include the Bonney upwelling, Deen Maar, eel migration, and whale migration.

Table 8-1: Potential impacts to cultural features

Cultural features	Receptors relevant to the Activity	What Activity Aspects could interact with these receptors?	How could cultural features be impacted by Activity Aspects
Tangible Cultural Heritage			
Coastal/island places and objects	• Victorian coastline • The Convincing Ground • Deen Maar • Discovery Bay Coastal Park • Wilsons Promontory and associated flooded Land Bridge • Tyrendarra lava flow	• Accidental Hydrocarbon Release • Spill Response	Shoreline hydrocarbon exposure has the potential to change the cultural heritage value of the site (Section 6.8) if sites are not accessible to First Nations people to be able to practice culture, or if sites are perceived to have been degraded by tainting with hydrocarbons. Section 6.8 identifies there is only low risk of minor local impacts to coastal/islands places and objects from hydrocarbon exposure in the event of unplanned discharge and accidental hydrocarbon release events. Section 8.3 considers the level of impact and risk to environment receptors that are also, or that are linked to, cultural features and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices.
Submerged sites	• Tyrendarra lava flow (Julia reef) • Wilsons Promontory and associated flooded land bridge	Accidental Hydrocarbon Release	Seabed disturbance (Section 6.3) has the potential to change the cultural heritage value of submerged landscapes if that disturbance is widespread and within those landscapes that feature within cultural practices, traditions and customs. There are no potential impacts to the seabed from the activity which have more than a localised footprint (within the operational area), and therefore there will be no landscape scale impacts, or effects on the submerged elements of the Tyrendarra lava flow which is >50 km from the operational area. Table 8-2 identifies there is only low risk of minor local impacts to environment receptors that are linked to submerged sites from hydrocarbon exposure (in the event of unplanned discharge and accidental hydrocarbon release events). Section 8.3 considers the level of impact and risk to environment receptors that are also, or that are linked to cultural features, and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices.
Intangible Cultural Heritage			

Cultural features	Receptors relevant to the Activity	What Activity Aspects could interact with these receptors?	How could cultural features be impacted by Activity Aspects
Sea Country	State and Commonwealth waters, including the Commonwealth marine environment, and habitats and species therein.	All Aspects	First Nations cultural heritage values associated with Sea Country, including culturally significant ecosystems and species, are considered based on their ecological values, food sources, and/or culturally significant totemic values. The First Nations people's values associated with culturally significant marine ecosystems and species have the potential to be disrupted if there are impacts to ecosystem functioning and integrity or species population. Table 8-2 summarises potential impacts and risks to environment receptors that are linked to Sea Country are mostly limited to localised and short-term impacts (Level 1 or 2 consequences), with no impacts at species population levels. The introduction, establishment and spread of IMS, accidental hydrocarbon release and spill response is a risk of up to Moderate severity (consequence Level 4 and 3 (respectively)). Section 8.3 considers the level of impact and risk to environment receptors that are also, or that are linked to cultural features, and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices.
Creation/ Dreaming sites, Songlines, sacred sites and Ancestral beings	• Victorian coastline • The Convincing Ground • Deen Maar • Discovery Bay Coastal Park • Wilsons Promontory and associated flooded land bridge • Tyrendarra lava flow • Whales	Multiple Aspects – see Section 8.2	Protection of whales is essential to Gunditjmara spiritual and physical well-being. Section 8.2 summarises potential impacts and risks environmental receptors that are linked to Creation/ Dreaming sites, Songlines, sacred sites and Ancestral beings are mostly limited to localised, short-term and recoverable impacts (Level 1 or 2 consequences). However, the introduction, establishment and spread of IMS, accidental hydrocarbon release and spill response have a risk of up to Moderate severity (consequence Level 4 and 3 (respectively)). Section 8.3 considers the level of impact and risk to environment receptors that are also, or that are linked to, cultural features and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices, traditions and customs.
Cultural obligations to care for	State and Commonwealth waters, including the Commonwealth marine	All Aspects	The potential disruption to the cultural ties to and responsibility to care for Sea Country is linked by potential impacts to the environment and the exclusion of First Nations people from Country or decision-making processes.

Cultural features	Receptors relevant to the Activity	What Activity Aspects could interact with these receptors?	How could cultural features be impacted by Activity Aspects
Country, Knowledge systems, and Connection to Country	environment, and habitats and species therein.		Potential change to knowledge on cultural heritage values will occur when the value is displaced, depleted or there is significant reduction in population of the value. If the value doesn't exist within the local area of Country, knowledge systems of that value will be disrupted or lost. Limitation on access, for safety reasons, can also affect the ability of First Nations peoples to practice their cultural obligations, traditions and customs, foster knowledge systems, and maintain connection to particular elements of country. Table 8-2 summarises potential impacts and risks to environment receptors that are linked to cultural features. These impacts and risks are mostly limited to localised and short-term impacts (Level 1 or 2 consequences), with no impacts at the population level. The introduction, establishment and spread of IMS, accidental hydrocarbon release and spill response carries a risk of up to Moderate severity for some environmental receptors that are also cultural features, including culturally significant species and places (Deen Maar). Section 8.3 considers the level of impact and risk to environment receptors that are also, or that are linked to tangible and intangible cultural features and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices, customs and traditions.
Ecosystems and Species			
Culturally significant species and food resources	Food resources (current and historical): • Fish, sharks, rays, eels (Kooyang), shellfish, crustaceans, whales, seals, Seabirds -collection from coastal and riverine environments • Plankton (basis of the food chain that provides	Multiple Aspects (see Section 8.2)	Food resources: The potential change to food resources can occur when the resource is depleted (such as a reduction in population of a species) or displaced. The ability for First Nations people to continue to collect marine species (as a food resource) has the potential to change if impacts and risks to the resource species results in a reduction in population or change movements and distribution that lowers their occurrence within Sea Country of a group of First Nations peoples. Connection to Ancestors: Impacts to culturally significant species at a population level has the potential to erode the ability for First Nations people ability to care for culturally significant species, and to continue cultural practices, traditions and customs that involve those species.

Cultural features	Receptors relevant to the Activity	What Activity Aspects could interact with these receptors?	How could cultural features be impacted by Activity Aspects
	for culturally significant species) Connection to ancestors: • Whales		Table 8-2 summarises potential impacts and risks to environment receptors, that include culturally significant species linked to resources, and those linked to ancestors (and associated obligations to care for those species as part of caring for Sea Country). The levels of impact are mostly limited to localised and short-term impacts (Level 1 or 2 consequences), with no impacts at the population level. The (unplanned) introduction, establishment and spread of IMS and accidental hydrocarbon release have a risk of up to Moderate severity (consequence Level 4 and 3 (respectively)). Section 8.3 considers the level of impact and risk to environment receptors that are also, or that are linked to cultural features, and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices.
Culturally significant species	Plankton associated with the productivity of Bonney Upwelling (Key Ecological Feature)	Multiple Aspects (see Section 8.2)	In relation to the physical occurrence and characteristics of the Bonney Upwelling, Butler et al. (2004) identify climate change as a possible influence on its strength or frequency, though was not of serious concern. Table 6 12 identifies GHG emissions associated with the activity as having a Level 1 Consequence, in the context of being equivalent to a small proportion of national GHG budgets that are linked to NDCs under the Paris agreement to limit the effects of global warming. Section 8.3 considers the level of impact and risk to environment receptors that are also, or that are linked to cultural features, and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices, customs, and traditions.
Water quality	State and Commonwealth waters, including the Commonwealth marine environment, and habitats and species therein.	Multiple Aspects (see Section 8.2)	Impacts to water quality from hydrocarbon exposure (Section 6.8), seabed disturbance (Section 6.3), and discharges (Section 6.2.1 and 6.2.2) result in potential physical/tangible change to cultural heritage value of oceans and waterways. Table 8-2 summarises potential impacts and risks to water quality are mostly limited to localised, short-term and recoverable impacts (Level 1 consequences or low risk severity). Section 8.3 considers the level of impact and risk to environment receptors that are also, or that are linked to cultural features, and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices, traditions, and customs.

Cultural features	Receptors relevant to the Activity	What Activity Aspects could interact with these receptors?	How could cultural features be impacted by Activity Aspects
Nearshore benthic habitats	Seabed in State Waters, including the habitats and species therein.	• Accidental Hydrocarbon Release • Introduction and establishment of IMS	Change to benthic habitats occurring at a widespread level, such as the introduction, establishment and spread of IMS (Section 6.7), has the potential to change the cultural heritage values of benthic ecosystems in coastal environment that provide habitat for culturally significant species, and resources for First Nations people. Table 8-2 summarises potential impacts and risks to benthic habitats from the activity; these are limited to localised and short-term impacts (Level 1 consequence) within the operational area. However, the introduction, establishment and spread of IMS has a risk of up to Moderate severity (Level 4 consequence), with impacts having the potential to extend beyond the operational area. Section 8.3 considers the level of impact and risk to environment receptors that are also, or that are linked to cultural features, and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices, traditions, and customs.
Intertidal communities and shorelines	Victorian State waters and shorelines: • Mangroves, macroalgae, seagrass, coastal saltmarsh, rocky and sandy shorelines.	• Accidental Hydrocarbon Release • Introduction and establishment of IMS • Spill Response	Shoreline hydrocarbon exposure (Section 6.8) and spill response activities (Section 7.6 and 7.7) resulting in potential physical/tangible change to cultural heritage value of intertidal communities and shorelines. Table 8-2 summarises potential impacts and risks to intertidal communities and shorelines are mostly limited to localised and short-term impacts (Level 1 consequence). However, the introduction, establishment and spread of IMS, accidental hydrocarbon release and spill response is a risk of up to Moderate severity (consequence Level 4 and 3 (respectively)). Section 8.3considers the level of impacts and risks to environment receptors that are also, or that are linked to cultural features, and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices, traditions, and customs.
Marine Park/ coastal reserves / wetlands	Wilsons Promontory, Ninety Mile Beach, Marengo Reef	• Accidental Hydrocarbon Release • Introduction and establishment of IMS	Hydrocarbon exposure (Section 6.8) resulting in potential physical/tangible change to cultural heritage value of Marine Parks, coastal reserves and wetland habitats that sustain culturally significant species.

Cultural features	Receptors relevant to the Activity	What Activity Aspects could interact with these receptors?	How could cultural features be impacted by Activity Aspects
		• Spill Response	Table 8-2 summarises potential impacts and risks to marine parks/coastal reserves/wetlands are mostly limited to localised and short-term impacts (Level 1 consequence). However, the introduction, establishment and spread of IMS, accidental hydrocarbon release and spill response is a risk of up to Moderate severity (consequence Level 4 and 3 (respectively)). Section 8.3 considers the level of impacts and risks to environment receptors that are also, or that are linked to cultural features, and evaluates the potential for degradation of those cultural features, and to their value in relation to continuation of cultural practices, traditions, and customs.

8.2 Activity Aspect Interactions with Cultural Features

Offshore development within or adjacent to Sea Country has the potential to impact cultural features of the environment. Table 8-2 above identifies the potential interactions between the particular aspects of this Activity and relevant Cultural Features of the environment identified through consultation, review of County Plans, on Country training, listening, and desktop research. Within Table 8-2, for each interaction the level of impact or risk is identified for the environment component that is intrinsically linked to, is part of, or is also a cultural feature.

The evaluation for each relevant environment component is detailed within Sections 6.0 and 1.0. The predicted impacts to these receptors are typically localised and / or generally short-term. The risk events associated with the activity typically have a higher consequence and could result in more extensive, and longer-term impacts to environment receptors. The most severe risk events being a major loss of hydrocarbon containment, and establishment and spread of IMS. These risk events are Unlikely, or Remote, and there are established effective measures in place to prevent their occurrence.

Considering the level of impact or risk from activity aspects assists determining the spatial and temporal extent of the potential disturbance to, or degradation of, the associated cultural feature.

For further details on the intrinsic links between cultural features of the environment and First Nations people's heritage site and values refer to Section 4.4.4

Table 8-2: Potential Interaction between Activity Planned and Unplanned Aspects and Cultural Features of the Environment relating to First Nations People Cultural Heritage Sites and Values

Cultural feature of the environment relating to First Nations people's heritage sites and values	Environmental receptor where the cultural feature may exist	Planned Emissions - Light	Planned Emissions - Atmospheric	Planned Discharges – Drill Cutting and Fluids	Planned Discharges – Cement	Planned Discharges – Operational	Planned Discharges – Other	Unplanned Physical Presence – Interaction with Marine Fauna	Unplanned Discharge – LOC (Chemicals and Hydrocarbons)	Unplanned Discharge – Hazardous / Non-hazardous waste	Seabed Disturbance	GHG Emissions	Underwater Sound Emissions – Impulsive	Underwater Sound Emissions – Continuous	Introduction, Establishment and Spread of IMS	Accidental Hydrocarbon Release (vessel and LOWC)	Oil Spill Response
Tangible Cultural Heritage																	
Coastal/ island places and objects, and submerged sites	• Victorian coastline • The Convincing Ground • Deen Maar • Discovery Bay Coastal Park • Wilsons Promontory and associated flooded Land Bridge • Tyrendarra lava flow															✓ Low inherent risk severity to heritage places Section 6.8.5	✓ Low risk severity associated with restricted access Section 1.0
Intangible Cultural Heritage																	
Sea Country	All physical and ecological receptors (Section 4.4.1 and 4.4.2)	✓ Consequence Level 1 - temporary and localised change in marine fauna behaviour Section 6.2.1	✓ Consequence Level 1 - temporary and localised change in air quality Section 6.2.1	✓ Consequence Level 1 – minor local impacts to water quality Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to water quality Section 6.2.1	✓ Low inherent risk severity to marine fauna Section 6.2.2	✓ Low inherent risk to water and sediment quality Section 6.2.2	✓ Low inherent risk to water and sediment quality Section 6.2.2	✓ Consequence Level 1 – minor local impacts to physical substrate Section 6.3.4.4	✓ Consequence Level 1 – minor contribution to carbon budget Section 6.4.5	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Moderate Risk Severity. Section 6.5.5	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Low Risk Severity. Section 6.6.4	✓ Moderate inherent risk severity from IMS Section 6.7.4	✓ Moderate inherent risk severity to shoreline habitats, avifauna, pinnipeds and cetaceans. Section 6.8.5	✓ Moderate inherent risk severity to shoreline habitats Section 1.0
Creation/ Dreaming sites, Songlines, sacred sites and Ancestral beings	• Culturally significant species • The Convincing Ground • Deen Maar • Discovery Bay Coastal Park			✓ Consequence Level 1 – minor local impacts to water quality Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1		✓ Low inherent risk severity to marine fauna Section 6.2.2		✓ Low inherent risk to water and sediment quality Section 6.2.2		✓ Consequence Level 1 – minor contribution to carbon budget Section 6.4.5	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Moderate Risk Severity. Section 6.5.5	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Low Risk Severity. Section 6.6.4	✓ Moderate inherent risk severity from IMS Section 6.7.4	✓ Moderate inherent risk severity to shoreline habitats, avifauna, pinnipeds and cetaceans.	✓ Moderate inherent risk severity to shoreline habitats Section 1.0

Cultural feature of the environment relating to First Nations people's heritage sites and values	Environmental receptor where the cultural feature may exist	Planned Emissions - Light	Planned Emissions - Atmospheric	Planned Discharges – Drill Cutting and Fluids	Planned Discharges – Cement	Planned Discharges – Operational	Planned Discharges – Other	Unplanned Physical Presence – Interaction with Marine Fauna	Unplanned Discharge – LOC (Chemicals and Hydrocarbons)	Unplanned Discharge – Hazardous / Non-hazardous waste	Seabed Disturbance	GHG Emissions	Underwater Sound Emissions – Impulsive	Underwater Sound Emissions – Continuous	Introduction, Establishment and Spread of IMS	Accidental Hydrocarbon Release (vessel and LOWC)	Oil Spill Response
													Section 6.5.5			Section 6.8.5	
Cultural obligations to care for Country	All physical and ecological receptors (Section 4.4.1 and 4.4.2)	✓ Consequence Level 1 - temporary and localised change in marine fauna behaviour Section 6.2.1	✓ Consequence Level 1 - temporary and localised change in air quality Section 6.2.1	✓ Consequence Level 1 – minor local impacts to water quality Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to water quality Section 6.2.1	✓ Low inherent risk severity to marine fauna Section 6.2.2	✓ Low inherent risk to water and sediment quality Section 6.2.2	✓ Low inherent risk to water and sediment quality Section 6.2.2	✓ Consequence Level 1 – minor local impacts to physical substrate Section 6.3.4.4	✓ Consequence Level 1 – minor contribution to carbon budget. Section 6.4.5	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Moderate Risk Severity. Section 6.5.5	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Low Risk Severity. Section 6.6.4	✓ Moderate inherent risk severity from IMS Section 6.7.4	✓ Moderate inherent risk severity to shoreline habitats, avifauna, pinnipeds and cetaceans. Section 6.8.5	✓ Moderate inherent risk severity to shoreline habitats Section 1.0
Knowledge systems	• Culturally significant species • The Convincing Ground • Deen Maar • Discovery Bay Coastal Park • Wilsons Promontory and associated flooded Land Bridge • Tyrendarra lava flow			✓ Consequence Level 1 – minor local impacts to water quality Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1		✓ Low inherent risk severity to marine fauna Section 6.2.2				✓ Consequence Level 1 – minor contribution to carbon budget Section 6.4.5	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Moderate Risk Severity. Section 6.5.5	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Low Risk Severity. Section 6.6.4	✓ Moderate inherent risk severity from IMS Section 6.7.4	✓ Moderate inherent risk severity to shoreline habitats, avifauna, pinnipeds and cetaceans. Section 6.8.5	✓ Moderate inherent risk severity to shoreline habitats Section 1.0
Connection to Country	All physical and ecological receptors (Section 4.4.1 and 4.4.2)	✓ Consequence Level 1 - temporary and localised change in marine fauna behaviour Section 6.2.1	✓ Consequence Level 1 - temporary and localised change in air quality. Section 6.2.1	✓ Consequence Level 1 – minor local impacts to water quality. Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna. Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna. Section 6.2.1	✓ Consequence Level 1 – minor local impacts to water quality. Section 6.2.1	✓ Low inherent risk severity to marine fauna. Section 6.2.2	✓ Low inherent risk to water and sediment quality. Section 6.2.2	✓ Low inherent risk severity to cultural heritage sites. Section 6.2.2	✓ Consequence Level 1 – minor local impacts to physical substrate. Section 6.3.4.4	✓ Consequence Level 1 – minor impact to freshwater rivers and wetlands. Section 6.4.4	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Moderate Risk Severity.	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Low Risk Severity. Section 6.6.4	✓ Moderate inherent risk severity from IMS. Section 6.7.4	✓ Moderate inherent risk severity to shoreline habitats, avifauna, pinnipeds and cetaceans.	✓ Moderate inherent risk severity to shoreline habitats. Section 1.0

Cultural feature of the environment relating to First Nations people's heritage sites and values	Environmental receptor where the cultural feature may exist	Planned Emissions - Light	Planned Emissions - Atmospheric	Planned Discharges – Drill Cutting and Fluids	Planned Discharges – Cement	Planned Discharges – Operational	Planned Discharges – Other	Unplanned Physical Presence – Interaction with Marine Fauna	Unplanned Discharge – LOC (Chemicals and Hydrocarbons)	Unplanned Discharge – Hazardous / Non-hazardous waste	Seabed Disturbance	GHG Emissions	Underwater Sound Emissions – Impulsive	Underwater Sound Emissions – Continuous	Introduction, Establishment and Spread of IMS	Accidental Hydrocarbon Release (vessel and LOWC)	Oil Spill Response
													Section 6.5.5			Section 6.8.5	
Ecosystems and Species																	
Culturally significant species and food resources	Fish, sharks, rays, eels (Kooyang), shellfish, and crustaceans from coastal environments									✓ Low inherent risk to marine fauna Section 6.2.2		✓ Consequence Level 1 – minor impact to freshwater rivers and wetlands Section 6.4.4			✓ Moderate inherent risk severity from IMS Section 6.7.4	✓ Moderate inherent risk severity to invertebrates, fish, and sharks Section 6.8.5	✓ Moderate inherent risk severity to marine fauna Section 1.0
Culturally significant species	Cetaceans			✓ Consequence Level 1 – minor local impacts to marine mammals Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine mammals Section 6.2.1	✓ Low inherent risk severity to marine fauna Section 6.2.2	✓ Low inherent risk to marine fauna Section 6.2.2	✓ Low inherent risk to marine mammals Section 6.2.2		✓ Consequence Level 1 – minor impact on ecosystems. Section 6.4.4	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Moderate Risk Severity. Section 6.5.5	✓ Consequence Level 2 – localised and short-term impacts to cetaceans. Low Risk Severity. Section 6.6.4	✓ Moderate inherent risk severity from IMS Section 6.7.4	✓ Moderate inherent risk severity to cetaceans. Section 6.8.5	✓ Moderate inherent risk severity to marine fauna Section 1.0
Culturally significant species	Pinnipeds			✓ Consequence Level 1 – minor local impacts to marine mammals Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine fauna Section 6.2.1	✓ Consequence Level 1 – minor local impacts to marine mammals Section 6.2.1	✓ Low inherent risk severity to marine fauna Section 6.2.2	✓ Low inherent risk to marine fauna Section 6.2.2	✓ Low inherent risk to marine mammals Section 6.2.2		✓ Consequence Level 1 – minor impact on ecosystems. Section 6.4.4		✓ Consequence Level 2 – localised and short-term impacts to pinnipeds. Low Risk Severity. Section 6.6.4	✓ Moderate inherent risk severity from IMS Section 6.7.4	✓ Moderate inherent risk severity to pinnipeds. Section 6.8.5	✓ Moderate inherent risk severity to marine fauna Section 1.0
Culturally significant species	Seabirds	✓ Consequence Level 1 - temporary and						✓ Low inherent risk severity to		✓ Low inherent risk to avifauna		✓ Consequence Level 1 – minor				✓ Moderate inherent risk	✓ Moderate inherent risk

Cultural feature of the environment relating to First Nations people's heritage sites and values	Environmental receptor where the cultural feature may exist	Planned Emissions - Light	Planned Emissions - Atmospheric	Planned Discharges – Drill Cutting and Fluids	Planned Discharges – Cement	Planned Discharges – Operational	Planned Discharges – Other	Unplanned Physical Presence – Interaction with Marine Fauna	Unplanned Discharge – LOC (Chemicals and Hydrocarbons)	Unplanned Discharge – Hazardous / Non-hazardous waste	Seabed Disturbance	GHG Emissions	Underwater Sound Emissions – Impulsive	Underwater Sound Emissions – Continuous	Introduction, Establishment and Spread of IMS	Accidental Hydrocarbon Release (vessel and LOWC)	Oil Spill Response
		localised change in marine fauna behaviour Section 6.2.1						marine fauna Section 6.2.2		Section 6.2.2		impact on ecosystems. Section 6.4.4				severity to avifauna Section 6.8.5	severity to avifauna Section 1.0
Culturally significant species	Plankton associated with the productivity of Bonney Upwelling (Key Ecological Feature)	✓ Consequence Level 1 - temporary and localised change in marine fauna behaviour. Section 6.2.1		✓ Consequence Level 1 – minor local impacts to plankton Section 6.2.1				✓ Low inherent risk severity to marine fauna. Section 6.2.2	✓ Low inherent risk to marine water and sediment quality. Section 6.2.2			✓ Consequence Level 1 – minor impact on ecosystems. Section 6.4.4	✓ Consequence Level 2 – localised and short-term impacts to plankton. Section 6.5.5	✓ Consequence Level 2 – localised and short-term impacts to plankton. Section 6.6.4	✓ Moderate inherent risk severity from IMS. Section 6.7.4	✓ Moderate inherent risk severity to plankton. Section 6.8.5	✓ Moderate inherent risk severity to marine fauna Section 1.0
Water quality	Offshore			✓ Consequence Level 1 – localised and temporary decrease in water quality Section 6.2.1	✓ Consequence Level 1 – minor local impacts to water quality Section 6.2.1	✓ Consequence Level 1 – localised and temporary decrease in water quality Section 6.2.1	✓ Consequence Level 1 – minor local impacts to water quality Section 6.2.1		✓ Low inherent risk to water and sediment quality Section 6.2.2	✓ Low inherent risk severity to water quality Section 6.2.2	✓ Consequence Level 1 – localised and temporary decrease in water quality Section 6.3.4.4					✓ Low inherent risk severity to water quality Section 6.8.5	
Benthic habitats	Nearshore benthic habitats / reefs									✓ Low inherent risk severity to benthic habitats Section 6.2.2		✓ Consequence Level 1 – minor impact on ecosystems. Section 6.4.4			✓ Moderate inherent risk severity from IMS Section 6.7.4	✓ Low inherent risk severity to benthic habitats Section 6.8.5	
Intertidal communities and shorelines	Mangroves, macroalgae, seagrass, coastal saltmarsh, rocky and sandy shorelines.											✓ Consequence Level 1 – minor impact on ecosystems. Section 6.4.4			✓ Moderate inherent risk severity from IMS Section 6.7.4	✓ Moderate inherent risk severity to shoreline habitats Section 6.8.5	✓ Moderate inherent risk severity to shoreline habitats Section 1.0

Cultural feature of the environment relating to First Nations people's heritage sites and values	Environmental receptor where the cultural feature may exist	Planned Emissions - Light	Planned Emissions - Atmospheric	Planned Discharges – Drill Cutting and Fluids	Planned Discharges – Cement	Planned Discharges – Operational	Planned Discharges – Other	Unplanned Physical Presence – Interaction with Marine Fauna	Unplanned Discharge – LOC (Chemicals and Hydrocarbons)	Unplanned Discharge – Hazardous / Non-hazardous waste	Seabed Disturbance	GHG Emissions	Underwater Sound Emissions – Impulsive	Underwater Sound Emissions – Continuous	Introduction, Establishment and Spread of IMS	Accidental Hydrocarbon Release (vessel and LOWC)	Oil Spill Response
Marine Park/ coastal reserves / wetlands	Wilsons Promontory, Ninety Mile Beach, Marengo Reef											✓ Consequence Level 1 – minor impact to freshwater rivers and wetlands Section 6.4.4				✓ Moderate inherent risk severity to coastal saltmarsh and wetlands Section 6.8.5	✓ Moderate inherent risk severity to shoreline habitats Section 1.0

8.3 Impact and Risk Evaluation

This section evaluates the potential disruption to the links between environment receptors and tangible and intangible cultural features described in Table 8-2. In doing so, this section considers the nature and scale of the planned activities and impacts and risks to relevant environment receptors outlined in Table 8-1.

8.3.1 Tangible and Heritage Sites

8.3.1.1 Coastal/ Island Places and Objects

Cultural heritage objects that may be found along the coast and islands within the monitoring area include shell middens, artefact scatters, and LDADs (the occurrence of stone artefacts at low densities) (Section 4.4.4.2). Shell middens and artefact scatters may be located close to the shoreline, whereas LDADs are typically found further inland (Biosis 2023).

Cultural heritage places located within the monitoring area that are significantly mentioned within relevant Country Plans or which have been identified through consultation include:

- The Convincing Ground
- Deen Maar
- Discovery Bay Coastal Park
- Wilsons Promontory
- Tyrendarra lava flow.

Potential disruption to cultural features

Cultural heritage objects and places have the potential to be exposed to shoreline hydrocarbons in an unlikely accidental hydrocarbon release event. Exposure of cultural heritage objects and places to hydrocarbons has the potential to degrade those objects and places, and their cultural value, and disrupt cultural practices, customs and traditions which may occur as associated with the object or place if those things are tainted or access to practice culture is restricted.

Figure 6-16and Figure 6-17 shows stochastic modelling predicting shorelines with the potential to be exposed to shoreline hydrocarbon. Shoreline accumulation will be concentrated along the high tide mark while the lower/upper parts are often untouched (IPIECA 1995). As a result, only coastal/island objects and places along the high tide mark have the potential to be exposure exposed to shoreline hydrocarbons. Cultural heritage objects and places located above the high tide mark are not expected to be exposed, and therefore, not expected to be impacted by shoreline hydrocarbons. Cultural heritage objects and places located below to low tide mark may have some limited exposure to hydrocarbons entrained in the water column.

The exposure of cultural heritage objects and places from shoreline hydrocarbons at the high tide mark could occur. Deen Maar Island, being a place considered by Traditional Owners to be linked to the transition of spirits from the earth, could be exposed to hydrocarbons around its rocky shores.

Deen Maar Island is not typically accessed but is a constant visual and spiritual link for First Nations peoples on the Mainland. Its cultural value in this respect would be unlikely to be disrupted by a spill of hydrocarbons of the nature and scale provided for within this plan. The topography of Deen Maar Island, and exposure to the ocean, provides a natural resilience against hydrocarbon spills; rocky shores lead into steep cliffs to the vegetated plateau high above the water. Due to the exposed location of Deen Maar Island, the highly volatile nature of the hydrocarbons associated with this

activity (light non-persistent), hydrocarbons accumulating on shorelines in the region, and potentially around cultural heritage objects and places, are likely to be readily removed in the presence of tidal and/or wave action. Beaches and rocky shores on the mainland, facing Deen Maar Island, and which may hold a place in ceremony and knowledge transfer also have the potential to be exposed to hydrocarbons, though modelling indicates that these areas (~77km north west of the operational area) may have the potential to be exposed to only Low concentrations of hydrocarbons; these levels of (light) hydrocarbons do not typically require intervention and are naturally dispersed over days and weeks.

The heritage value of cultural heritage objects and places temporarily exposed to shoreline hydrocarbons is not expected to change. The temporary exposure of cultural heritage objects and places to shoreline hydrocarbons may temporarily contaminate the objects or sites however, weathering of light non-persistent hydrocarbons will prevent long-term hydrocarbon exposure. Although this could disrupt cultural linkages to exposed components of the environment; this disruption would be temporary and recoverable. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

Consultation with First Nations groups indicates that First Nations people would like to be engaged in the event of a spill, to be part of the recovery efforts (Consultation Day GMTOAC 17 February 2024, Ref: FN-GMTOAC-20240405-Email for Athena Supply Project - Athena Supply Project). This was re-affirmed by GLaWAC during consultation in the development of this EP (Event ID 2025 0828 141512 7349). The involvement of First Nations people would be expected to accelerate recovery of Country and avoid additional disruption to cultural heritage from response efforts. It would also facilitate cultural reconnection with Sea Country impacted by a potential spill, and acknowledge the significant relationship between First Nations people, Sea Country and the culturally significant species and ecosystems.

Relevant First Nations groups will be engaged in the event an accidental hydrocarbon release will expose cultural heritage objects and places to hydrocarbons as specified in Section 6.8.5 and the OPEP. Amplitude Energy maintains a list of key First Nations persons who have expressed an interest in playing a key role in the protection of cultural heritage during such emergency events. This list will be shared with the relevant state control agency.

The intrinsic link between coastal/island objects and places and First Nations people is expected to be maintained given values of the objects and places is not expected to change and First Nations people will be central to the management of these objects and places in the event of an accidental hydrocarbon release.

8.3.1.2 Submerged Sites

Sea Country is considered by First Nations Groups to extend beyond formally defined RAP areas to include sea and submerged lands to the edge of the continental shelf. Activity aspects with the potential to interact with the seabed are limited to within the Operational Area. The Operational Area may overlap areas that were above sea level, and inhabited around pervious glacial maxima, over 10,000 years ago. Amplitude Energy investigated the potential heritage landscapes identified as of particular significance during consultation and review of First Nations Country Plans. Of concern were the cultural values associated with Budj Bim which is established within the Tyrendarra Lava flow. Features of this nature do not occur within the operational area; please refer to Section 6.3.4.4 for further details including of newer volcanic features in the region.

Potential disruption to cultural features

Submerged sites have the potential to be impacted by Activity aspects that disturb the seabed. Disturbance to seabed within the operational area is expected to be localised and recoverable (Table 8-2). The area of impact is small compared to the extent and distribution of the substrate types within the operational area across the wider region (Sections 6.0 and 1.0, Table 8-2). No underwater cultural heritage sites, including other cultural artefacts, have been identified within the Operational Area.

The likelihood of identifying cultural artefacts within the operational area is considered low given the high energy nature of the ocean in the region, and the exposed, eroded seabed (Section 6.3.4.4). Consultation with Heritage Victoria indicated that the risk of the project impacting cultural heritage was low, given the limited footprints involved. Large scale impacts to submerged landscapes were also not expected given the limited seabed footprints involved in the Activity (pers comm Heritage Victoria 2024). However, impacts could still have the potential to occur. Given this, additional control measures have been designed into the EP (Section 6.3.4.4)

Given the operational area, and associated seabed disturbance is located away from reported landscape features of particular cultural significance (recent Tyrendarra Lava Flow and analogous lava flow complexes), the expected absence of artifacts, and that disturbance to cultural heritage (if it were unexpectedly found) is regulated to avoid damage (CM30: Underwater Cultural Heritage Disturbance Risk Management Measures), the intrinsic links between submerged sites and First Nations people are expected to be maintained.

An accidental release of hydrocarbons has the potential to impact on submerged sites, via contact with hydrocarbons entrained within the water column. However, given the limited volumes, and low persistence of the hydrocarbons associated with this activity, any hydrocarbon contact would be brief and would not be expected to change the nature or integrity of submerged features.

The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

8.3.2 Intangible Heritage Sites and Values

8.3.2.1 Sea Country

Sea Country is an intrinsic value to First Nations people. Sea Country may include parts of open ocean, beaches, land and freshwater on the coast, habitats, and may encompass all living things, beliefs, values, creation spirits and cultural obligations connected to an area. The operational area and monitoring area overlaps Sea Country as described by First Nations Groups respective Country Plans. Many First Nations groups have a close connection with the sea and its resources which are central to culture. It is a place of abundant resources and habitat to culturally significant flora and fauna. Caring for Sea Country is vitally important to First Nations groups of the Otway region. First Nations people's wellbeing and confidence is reliant on the authority to access and practice on Country (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023; Eastern Maar Aboriginal Corporation 2014).

Potential disruption to cultural features

Activity impacts and risks to the biological and physical components of sea country are described in Sections 6.0 and 1.0. First Nations intangible cultural heritage values associated with Sea Country including ecosystems and species are considered based on their ecological values, food sources or culturally significant totemic values. The First Nations people's values of marine ecosystems and species have the potential to change if there are impacts to ecosystem functioning and integrity or species population.

As summarised in Table 8-2, potential impacts and risks to fish, marine mammals and seabirds and shorebirds, and water and sediment quality are mostly limited to localised and short-term impacts (Level 1 or 2 consequences), with no impacts at the population level, or which would manifest in disruption to a cultural feature. As an activity with limited nature and scale, close to existing offshore infrastructure, potential disruption to Sea Country values is expected to be negligible; energy infrastructure has previously been installed on the seabed as well as onshore, and continues to coexist with First Nations peoples values, memories and Songlines relating to Country (ACMI 2010; Biosis 2023).

The introduction, establishment and spread of IMS and accidental hydrocarbon release is a risk of up to Moderate severity, and could affect marine resources, including resources collected by First Nations peoples in Coastal Areas. With preventative and response controls in place, impacts and risks from these aspects are not expected to eventuate, nor result in widespread long-term impacts to Sea Country or impacts to ecosystem functioning and integrity or species populations. Links between environment receptors and cultural features could be disrupted in the unlikely event of a major hydrocarbon spill, or remote event of IMS introduction and spread, but are expected to be recoverable. The risk severity is considered to be the same for the cultural feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

8.3.2.2 Creation/ Dreaming sites, Songlines, sacred sites and Ancestral beings

Creation/ Dreaming sites, Songlines, ceremonial sites link First Nations people to ancestors, culture, traditions, customs, traditional laws and Country. Songlines relating to the flooding gives significance to now submerged landscapes. Onshore, the Convincing Ground remains a place of ceremony for the Gunditjmara who gather at the site annually to reflect on the ongoing impacts of colonisation on their people (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023). Deen Maar is an important Dreaming site where Ancestors leave the earth. Karntubul (whales) are Ancestors of Gunditjmara and have featured in dreaming stories, ceremony, song and dance of Gunditjmara.

Potential disruption to cultural features

Activity impacts to seabed are limited to the operational area, offshore and are not associated with landscapes of particular cultural significance such as the Tyrendarra Lava Flow that occurs further west, or the submerged land bridge linked to Wilsons Promontory further east. Activity risks events have the potential to affect cultural features highlighted as of importance during consultation, including the Convincing Ground, Deen Maar, and whales. These Activity risks therefore have the potential to disrupt the intrinsic links between First Nations people and the values of Creation/Dreaming, songlines, sacred sites and Ancestral beings. As evaluated in Section 8.3.2.1, disturbance to seabed in the operational area is expected to be localised and recoverable (Table 8-2). The area of impact is small compared to the extent and distribution of substrate type identified within the Operational Area and its occurrence across the wider region (Sections 6.0 and 1.0, Table 8-2). Landscape scale impacts (submerged landscapes) were also not expected given the limited seabed footprints involved (*pers comm Heritage Victoria, 2024*). Energy infrastructure has previously been installed on the seabed as well as onshore, and continues to coexist with First Nations peoples values, memories and Songlines relating to Country (Biosis 2023). Given the changes to seabed from Activity aspects are localised, short-term and recoverable, and the absence of submerged landscapes, the intrinsic links between First Nations people and Songline values of benthic habitats is expected to be maintained.

Shoreline hydrocarbon exposure to The Convincing Ground and Deen Maar has the potential to change the intangible cultural heritage values (for example, Creation/ Dreaming sites, sacred sites and Ancestral beings) of these sites. As evaluated in Section 8.3.1.1, the (risk) temporary exposure of The Convincing Ground and Deen Maar to shoreline hydrocarbons is not expected to change the

heritage values of the site. The temporary exposure to shoreline hydrocarbons may temporarily contaminate the sites however, weathering of light non-persistent hydrocarbons will prevent long-term hydrocarbon contamination. Relevant First Nations groups will be notified in the event an accidental hydrocarbon release will expose The Convincing Ground and/or Deen Maar to hydrocarbons as specified in Section 6.8.5 and the OPEP. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

Amplitude Energy maintains a list of key First Nations persons who have expressed an interest in playing a key role in the protection of cultural heritage during such emergency events. This list will be shared with the relevant state control agency. The intrinsic links between First Nations people and cultural heritage values (Creation/ Dreaming sites, sacred sites and Ancestral beings) of The Convincing Ground and Deen Maar is expected to be maintained given First Nations people will be central to the management of these sites in the event of an accidental hydrocarbon release.

As summarised in Table 8-2, potential impacts to whales from Activity aspects are mostly limited to localised and short-term impacts (Level 1 or 2 consequences), such as small, temporary changes to migratory or foraging behaviours (see Section 6.6.4), and which be managed to minimise behavioural disturbance to southern right whales and blue whales. The risk of vessels physically interacting with whales is Low and managed through the implementation of cautionary and no-approach zones around whales. These risks, though unlikely, if they were to eventuate, are not anticipated to impact population levels, distribution or local ecosystem function. With controls in place, impacts and risks to whales from Activity aspects are not expected to impact the intrinsic links between First Nations people and whales that are valued as Ancestral beings, and will not affect populations or distributions of whales to the extent that Gunditjmara practice of ‘calling in’ whales would be disrupted. As such, the intrinsic links between First Nations people and Ancestral beings (whales) is expected to be maintained. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

Amplitude Energy commits to CM05: Ongoing Consultation and Notification, to ensure First Nations people will be central to the management of First Nations people’s heritage sites and values.

8.3.2.3 Cultural obligations to care for Country

First Nations people may be culturally obligated and inherently responsible to care, protect and heal Country for present and future generations. The roles held relating to taking care of Country and knowledge holding may vary amongst individuals and within clans and family groups. Roles include taking care of culturally significant species or habitats of significant species known to be important food resources (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023). The obligation to care for Country can be deep rooted in First Nations cultural laws and customs (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023). Caring for Country emphasises the protection and management of land, waters and plants and animals that reside in these areas and ensures they are preserved for future generations (Gunaikurnai Land and Waters Aboriginal Corporation 2015).

Potential disruption to cultural features

By sharing of information through consultation, Country Plans, and on Country teachings, First Nations people have articulated the particular values and sensitivities that are important to them, and which will require particular consideration within the assessment of impacts and risks and their management. This is consistent with their cultural ties to and inherent responsibility to care for Country. As evaluated in Section 8.3.2.1, Activity aspects are not expected to result in widespread long-term impacts to Sea Country or impacts to ecosystem functioning and integrity or species

populations. Table 8-2 summarises how potential impacts and risks to marine wildlife, water and sediment quality, and cultural heritage are mostly limited to localised and short-term impacts (Level 1 or 2 consequences).

As an activity with limited nature and scale, close to existing infrastructure, potential disruption to Sea Country values is expected to be negligible; energy infrastructure has previously been installed on the seabed as well as onshore, and continues to coexist with First Nations peoples intangible cultural heritage values including memories and Songlines relating to Country (ACMI 2010; Biosis 2023).

The unplanned introduction, establishment and spread of IMS, accidental hydrocarbon release and spill response have the potential for moderate risk to environment receptors. With controls in place impacts and risks to Sea Country are not expected to impact ecosystem functioning and integrity or species populations.

The exclusion of First Nations people from accessing Country or decision-making processes for Country may risk disrupting the intrinsic and important link between First Nations people and obligations to care for Country. Scenarios where First Nations people are restricted in their access to Country could occur in the event of an accidental hydrocarbon release for safety reasons. To maintain and ensure First Nations people are central to the management of the Country, relevant First Nations groups will be notified in the event an accidental hydrocarbon release as specified in Section 6.8.5 and the OPEP. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

Amplitude Energy maintains a list of key First Nations persons who have expressed an interest in playing a key role in the protection of cultural heritage during such emergency events. First Nations people's and obligations to care for Country is expected to be respected and maintained given First Nations people will be central to the management of these sites in the event of an accidental hydrocarbon release which could impact them.

Amplitude Energy commits to CM05: Ongoing Consultation and Notification, to ensure First Nations people will be central to the management of First Nations people's heritage sites and values.

8.3.2.4 Knowledge systems

First Nations peoples ecological, spiritual, traditional and cultural knowledge may be passed from generation to generation using cultural practices (Dreaming stories, ceremony, song and dance) where knowledge holders (Elders) are the custodians of knowledge. This knowledge includes (but is not limited to) culturally significant species, and landscape features that hold Dreaming and creation stories or are events and ceremonial places critical for intergenerational knowledge sharing and cultural practice.

Receptors relevant to First Nations people knowledge systems include:

Culturally significant species including food resources, cetaceans, pinnipeds, seabirds and plankton (refer to Sections 8.3.3.1, 8.3.3.2, 8.3.3.3, and 8.3.3.4)

Cultural heritage places including benthic habitats, The Convincing Ground, Deen Maar, Discovery Bay Coastal Park, Wilson Promontory, and Tyrendarra lava flow (refer to Section 8.3.1.1 and Section 8.3.1.2).

Potential disruption to cultural features

Impacts and risks resulting in the exclusion of access to cultural heritage places or displacement/reduction in population of culturally significant species have the potential to disrupt the intrinsic link between environment receptors and knowledge systems.

Activity aspects are not expected to result in widespread long-term impacts to environment receptors (including those that are part of knowledge systems). Table 8-2 summarises how potential impacts and risks to environment receptors are mostly limited to localised and short-term impacts (Level 1 or 2 consequences). As an activity with limited nature and scale, and in close proximity to existing infrastructure, potential disruption to knowledge systems is expected to be negligible. Energy infrastructure has previously been installed on the seabed as well as onshore, and continues to coexist with First Nations peoples values, memories and Songlines relating to Country (ACMI 2010; Biosis, 2023).

The unplanned introduction, establishment and spread of IMS, accidental hydrocarbon release and spill response have the potential for moderate risk to environment receptors. If access to heritage places is restricted or if the value doesn't exist within the local area of Country, knowledge systems of that value can potentially be disrupted or lost.

The potential to exclude First Nations people from accessing Country may risk disrupting the intrinsic links between First Nations people and knowledge systems. Scenarios where First Nations people are restricted access to Country may occur in the event of an accidental hydrocarbon release for safety reasons. The temporary exposure of cultural heritage places to shoreline hydrocarbons may temporarily result in restricted access to cultural heritage places. Due to the highly volatile nature of the hydrocarbons (MDO and Condensate) as a light non-persistent hydrocarbon (see Section 6.8.3.2), shoreline hydrocarbons at cultural heritage places, are likely to be easily washed off in the presence of tidal and/or wave action. As a result, access restrictions (if any) would be temporary and not long-term. Relevant First Nations groups will be engaged in the event an accidental hydrocarbon release will expose cultural heritage places to hydrocarbons as specified in Section 6.8.5 and the OPEP. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

Amplitude Energy maintains a list of key First Nations contacts who have expressed an interest in the protection of cultural heritage during such emergency events. The intrinsic links between environment receptors and First Nations peoples knowledge systems is expected to be maintained given First Nations people will be central to the management of these sites in the event of an accidental hydrocarbon release.

As summarised in Table 8-2, potential impacts and risks to culturally significant species such as fish, marine mammals and seabirds and shorebirds are mostly limited to localised and short-term impacts (Level 1 or 2 consequences). The introduction, establishment and spread of IMS and accidental hydrocarbon release has the potential for moderate inherent risk. With controls in place, impacts and risks from these aspects are not expected to result in impacts to species populations. As such, the intrinsic link between environment receptors and First Nations peoples is expected to be maintained.

Amplitude Energy commits to CM05: Ongoing Consultation and Notification, to ensure First Nations people will be central to the management of First Nations people's heritage sites and values.

8.3.2.5 Connection to Country

First Nations people may hold strong connections to the south-east marine region, as occupation of coastal areas dates back over at least 40,000 years (DoE 2015a). The Victorian coast is of significance

with respect to First Nations tangible and intangible cultural heritage. This includes areas where there may be no physical evidence of past cultural activities but includes places of spiritual or ceremonial significance, places where traditional plant or mineral resources occur or trade and travel routes (Aboriginal Victoria 2008).

Potential disruption to cultural features

Impacts and risks and restriction of access to Sea Country are potential risks to the intrinsic links between First Nations people and connection to Country.

As evaluated in Section 8.3.2.1, impacts and risks from Activity aspects are not expected to result in widespread long-term impacts to Sea Country or impacts to ecosystem functioning and integrity or species populations. Table 8-2 summarises how potential impacts and risks to marine fauna, water and sediment quality, and cultural heritage are mostly limited to localised and short-term impacts (Level 1 or 2 consequences). As an activity with limited nature and scale, and in close proximity to existing infrastructure, potential disruption of Connections to Country is expected to be negligible; energy infrastructure has previously been installed on the seabed as well as onshore and continues to coexist with First Nations peoples intangible cultural heritage values, memories and Songlines relating to Country (ACMI 2010; Biosis 2023).

The introduction, establishment and spread of IMS and accidental hydrocarbon release has the potential for moderate inherent risk. With controls in place, impacts and risks to Sea Country are not expected to impact ecosystem functioning and integrity or species populations. As such, the intrinsic links between environment receptors and First Nations peoples connection to Country is expected to be maintained.

As evaluated in Section 8.3.2.5, restriction of access to Country may occur in the event of an accidental hydrocarbon release for safety reasons. The presence of shoreline hydrocarbons may temporarily result in restricted access to Country. Due to the nature of the hydrocarbons associated with the Activity (MDO and Condensate) being light and non-persistent (see Section 6.8.3.2), shoreline hydrocarbons are likely to be readily weathered and washed off in the presence of tidal and/or wave action. As a result, if access to Country is affected, it would be temporary and not long-term. Relevant First Nations groups will be engaged in the event an accidental hydrocarbon release will expose cultural heritage places to hydrocarbons as specified in Section 6.8.5 and the OPEP. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

Amplitude Energy maintains a list of key First Nations persons who have expressed an interest in playing a key role in the protection of cultural heritage during such emergency events. The intrinsic link between the environment receptors and First Nations peoples connection to Country is expected to be maintained given First Nations people will be central to the management of these sites in the event of an accidental hydrocarbon release.

8.3.3 Ecosystems and Species

8.3.3.1 Culturally significant species and food resources

Culturally significant food resources occur in the Otway Region. Highlighted during consultation and cultural training were short-finned eels (Kooyang). Kooyang migrate through the Otway Region including State waters and the Commonwealth Marine Area to/from freshwater systems in Gunditjmara Country to/from spawning grounds in the Coral Sea. Gunditjmara engineered aquaculture systems from volcanic formations associated with the Tyrendarra Lava flow (circa. 30,000 years old) to create Budj Bim. Eels were captured, fattened up, harvested, smoked and traded.

Potential disruption to cultural features

Eels are an important resource for First Nations people as identified during consultation and review of relevant First Nations group Country Plans (Table 4-6). First Nations groups and specific individuals within the groups may have responsibility to care for eels and their habitats to ensure associated cultural practices, and ventures such as cultural education tourism, can continue for future generations (Table 4-6). Koster et al. (2024), and Church et al. (2021), identify conservation considerations for the short-finned eel. These include potential changes to river flows from climate change, and physical/anthropogenic habitat modification, both of which have the potential to affect the migratory success of populations, and therefore, affect the cultural practices associated with eel migration.

As summarised in Table 8-2, potential impacts to eels from Activity aspects are limited to Level 2 consequences of localised and short-term impacts to behaviour of individuals, but no population level impacts. There are no habitat modifications caused by the activity which would be expected to have an impact on migration to or from freshwater systems where they are harvested. This is because of the limited nature and scale of impacts to environment receptors, generally limited to the operational area and ecological thresholds for planned aspect of the activity, and the offshore location of the activity, away from freshwater habitats where the species migrates from and to, via a highly dispersed migration through the South East Marine Region.

Subsea noise generated by activity vessels and equipment has the potential to cause minor behavioural reactions in fish, including eels (i.e. possible brief changes to swimming speed / direction in the vicinity of Activity activities), which will not result in changes to eel migratory behaviour or success. The sources of noise, and potential affects effects on fish and eel is described in more detail in Section 6.5.4. There is negligible risk that planned aspects of the activity may either directly or indirectly impact on eel populations or migratory outcomes. As an existing activity with limited nature and scale, potential disruption to sea country values is expected to be negligible; energy infrastructure has previously been installed on the seabed as well as onshore, and continues to coexist with First Nations peoples values, memories and Songlines relating to Sea Country (ACMI 2010; Biosis, 2023).

The unplanned introduction, establishment and spread of IMS, and accidental hydrocarbon release from the activity carry moderate risk. With controls in place (described in Section 6.0 and 1.0.), these unplanned events are not expected to occur, or result in long term impacts to species populations. As such, the cultural ties and intrinsic links between environment receptors and First Nations peoples is expected to be maintained.

8.3.3.2 Culturally significant species – cetaceans

First Nations people around Australia have long had a strong connection to whales, which has significance as totemic ancestors to some groups. Karntubul (whales) in Sea Country hold deep cultural significance to the Gunditjmara and feature in Dreaming stories, ceremony, song and dance traditions.

Cetaceans are culturally significant species for the First Nations peoples as identified during consultation and review of relevant First Nations group Country Plans (Table 4-6). First Nations people have a cultural responsibility to ensure cetaceans that reside within and migrate through Sea Country are cared for and healthy and their habitat is sustained. Whales feature in Dreaming stories, ceremony, song and dance of some First Nations groups along the coasts of Australia. The protection of Karntubul (whale) species is paramount to Gunditjmara spiritual, physical wellbeing and it is the responsibility of Gunditjmara people to care for Sea Country and protect the species for present and future generations. Whales are also a resource, and Gunditjmara people still collect parts of beached

whales, as has been done for thousands of years (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023).

EPBC threatened and migratory cetaceans are present within the operational area and monitoring area during seasonal migrations. A Pygmy blue whale foraging BIA and a Southern right whale migration BIA and reproduction BIA overlaps the operational area. The monitoring area overlaps a foraging and distribution BIAs for the pygmy blue whale, migration and reproduction BIAs for the southern right whale, and foraging BIAs for the humpback whale (Section 4.4.2).

Potential disruption to cultural features

First Nations groups and specific individuals within the groups may have kinship and/or responsibility to care for culturally significant species and their habitats (see Table 4-6). It is considered that impacts to species at a population level may inhibit First Nations people's ability to perform their obligations to care for culturally significant species and their habitats.

There is potential that individual whales could be behaviourally affected or physically impacted by the presence/movement and noise of vessels which may occasionally be required for inspection and maintenance of the subsea facilities. Control measures have been established to minimise the risk of physical impact and behavioural disturbance. Therefore, the potential that overall whale occurrence nearby the coast, or the numbers of beached whales will be influenced by the activity is considered negligible.

As summarised in Table 8-2, potential impacts to cetaceans from Activity aspects are limited to Level 2 consequences of localised and short-term impacts to behaviour of individuals, but no population level impacts. These consequences are considered to be unlikely to occur, and the risk to whales is considered to be Low. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Low). This is considered appropriate as cultural practices incorporate the movement of populations of whales into the region. Whilst there may be low level impacts to individuals, these impacts are not expected to result in changes to whale migratory outcomes, impact population levels or change population distributions. An accidental hydrocarbon release carries moderate risks. With controls in place (described in Section 6.8 and 1.0), impacts and risks from these aspects are not expected occur, or to result in impacts to species populations. As such, the cultural ties and intrinsic links between environment receptors and First Nations peoples is expected to be maintained.

8.3.3.3 Culturally significant species – pinnipeds

Pinnipeds such as seals and sealions may be of significant value to First Nations people. The First Nations people of the Otway region have a profound relationship with Sea Country and seals feature in cultural practices and Dreaming stories and have been hunted as a valuable food resource. Koorn Moorn (seals) feature in song and dance of the Gunditjmara people and are also a food resource. There is evidence of the collection of seals within the Tarragal cave site that date back to 10,000 years (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023).

Important colonies and breeding habitats are found within the Monitoring Area and are in within proximity of the operational area (Figure 4-15).

Potential disruption to cultural features

First Nations groups and specific individuals within the groups may have kinship and/or responsibility to care for culturally significant species and their habitats (see Appendix 4 -). It is considered that impacts to species at a population level may inhibit First Nations people's ability to perform their obligations to care for culturally significant species and their habitats. If responsibilities have not

been met it could result in a sense of powerlessness to members of First Nation groups responsible for the protection and care of these species (Holcombe 2022).

As summarised in Table 8-2, potential impacts to pinnipeds from Activity aspects are limited to Level 1 consequences of minor and local to behaviour and possible temporary changes to habitat in the offshore environment, within or local to the operational area, and not within coastal environments where fauna are more likely to be encountered by people; no discernible disruption to cultural links would be expected. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Low).

Accidental hydrocarbon releases have the potential for moderate inherent risk wider afield, including in coastal areas. As described in Section 6.0, hydrocarbon exposure, of the potential nature and scale associated with Activity risks, would not be expected to result in changes to pinniped foraging and breeding behaviours or impact population levels. There is negligible risk that aspects of the Activity may either directly or indirectly impact on pinniped populations. With controls in place, these impacts and risks from these aspects are not expected to impact culturally significant species at a population level and hence are not expected to impact the value of culturally significant species. As such, the cultural ties and intrinsic links between environment receptors and First Nations peoples cultural heritage values is expected to be maintained.

8.3.3.4 Culturally significant species – seabirds

Seabirds may play a vital role in some First Nations cultural stories and traditions and birds and eggs are a source of food to many First Nations groups. Different avian species hold deep connections to lore and represent spiritual emblems or totems. The arrival of migratory seabirds and breeding seasons of seabirds are important markers for the different seasons observed by First Nations groups (Eastern Maar Aboriginal Corporation, 2014). Magpie gees and Cape Barren geese were harvested for food from wetland habitats (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023). For the Gunaikurnai people of Gippsland, sea birds play a role in their cultural stories and traditions. One notable story involves Borun, the pelican, who is a significant figure in their creation story. Borun is considered the ancestor of the Gunaikurnai people, highlighting the importance of sea birds in their cultural heritage (Gunaikurnai Land and Waters Aboriginal Corporation, 2015).

Seabirds are of significant value to some First Nations people. Foraging BIAs for nine seabird species overlap the Operational Area. Breeding, migration and aggregation areas can be found within the monitoring area (See Section 4.4.2, and Figure 4-8 to Figure 4-14).

Potential disruption to cultural features

First Nations groups and specific individuals within the groups may have kinship and/or responsibility to care for culturally significant species and their habitats (Appendix 4 -). It is considered that impacts to species at a population level may inhibit First Nations people's ability to perform their obligations to care for culturally significant species and their habitats. If responsibilities have not been met it may result in a sense of powerlessness to members of First Nation groups responsible for the protection and care of these species (Holcombe 2022).

As summarised in Table 8-2, potential impacts could result from temporary changes to the physical environment, such as via the introduction of a source of artificial light, which could be visible at distances up to ~48km from the operational area. As described in Section 6.0, impacts from planned Activity aspects such as light, are limited to Level 1 consequences of minor and local to behaviour, not resulting in population level impacts, or which change migratory outcomes.

Accidental hydrocarbon release is considered a Low risk for seabirds. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Low). With controls in place, these impacts and risks from these aspects are not expected to impact culturally significant species at a population level, as such, the cultural ties and intrinsic link between environment receptors and First Nations peoples cultural heritage values is expected to be maintained.

The unplanned introduction, establishment and spread of IMS, and accidental hydrocarbon release from the activity carry moderate risk. With controls in place (described in Section 6.0 and 1.0), these unplanned events are not expected to occur, or result in long term impacts to species populations. As such, the cultural ties and intrinsic links between environment receptors and First Nations peoples is expected to be maintained.

8.3.3.5 Bonney Upwelling - Key Ecological Feature

The Bonney Upwelling plays a crucial role for the ecosystems of the Otway region. The plankton that blooms with the Bonney Upwelling system supports many culturally significance species and are integral to the diets of culturally significant marine species such as whales, seals, fish and sea birds. The Gunditj Mirring people recognise the significance of the Bonney Upwelling as a dominant feature in the Otway marine region which brings cool nutrient rich water to the surface which supports plankton blooms.

Phytoplankton and zooplankton are widespread throughout oceanic environments and will occur within the operational area and monitoring area with a high level of diversity. Coastal krill swarms throughout the water column of continental shelf waters primarily in summer and autumn (linked to the Bonney Upwelling), feeding on microalgae and forming a fundamental component of the food chain that provides for culturally significant species.

Potential disruption to cultural features

First Nations groups and specific individuals within the groups may have kinship and/or responsibility to care for culturally significant species and their habitats (Appendix 4 -). Changes in the frequency or intensity of the Bonney Upwelling impacts the abundance of plankton which can have impacts on culturally significant species in the region such as whales, seals, fish and sea birds (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023).

In relation to the physical occurrence and characteristics of the Bonney Upwelling, Butler et al. (2004) identify climate change as a possible influence on its strength or frequency, though was not of serious concern. As summarised in Table 8-2, potential impacts to physical oceanographic processes are limited. The Activity contributes minor quantities of GHG emissions to Australia's carbon budget. There are no aspects of the Activity which may have a discernible effect on the occurrence, extent or productivity of the Bonney Upwelling. With regards the plankton that are associated with upwelling events, Activity aspects may have very localised and temporary impacts to negligible proportions of the plankton population (Table 8-2). These impacts will not result in changes to plankton local or regional diversity or productivity of plankton, or those fauna which rely on them as a food source. Therefore, the intrinsic links between these environment receptors and First Nations peoples cultural heritage values associated with plankton is expected to be maintained irrespective of the Activity activities.

8.3.3.6 Water quality

Water can be of particular cultural significance to First Nations peoples as an integral part Country, songs, ceremonies, hunting and collecting, and other activities that bind people to their Country and

each other. Aboriginal communities in Victoria maintain strong connections to waters and culture and may have knowledge of particular water sources. Water sources on Country may be culturally significant or archaeologically prospective. Water may be an intrinsic value to First Nations people, and it may include parts of Sea Country, beaches, land and freshwater habitats on the coast.

Potential disruption to cultural features

Planned discharges and unplanned releases have the potential to change water quality of offshore and coastal waters. The change in water quality has the potential to impact culturally significant species and harm Country. Community concerns from the Wadawurrung people on changes in water quality from pollution from industry and development has been noted (Wadawurrung Traditional Owners Aboriginal Corporation 2020).

As summarised in Table 8-2, potential impacts to water quality from planned Activity aspects are limited to Level 1 consequences of minor, temporary, and localised changes in the offshore environment. It is inferred that this level of impact in the offshore environment, would not cause disruption to the linkage between the environment receptor and First Nations peoples cultural practices. However, an accidental hydrocarbon release has the potential for more widespread reduction in water quality in Sea Country, and which could cause concern as to actual or perceived impacts to water quality. Relevant First Nations groups will be engaged in the event of an accidental hydrocarbon release as specified in Section 6.8.5 Amplitude Energy maintains a list of key First Nations persons who have expressed an interest in playing a key role in the protection of cultural heritage during such emergency events. With controls in place, the risks from an accidental hydrocarbon release are not expected to result in widespread long-term impacts to Sea Country or impacts to ecosystem functioning and integrity, or species populations. As such, intrinsic links between First Nations people and cultural heritage values associated with water quality is expected not expected to be disrupted long term and would be recoverable.

8.3.3.7 Benthic habitats, intertidal communities, and shorelines

Benthic habitats may be valuable to First Nations people for their ecological values to sustain culturally significant species and for food resources. Benthic habitats within the Otway and Broader Bass Strait include sponge-dominated reef and sandy substrates. Within the operational area, patchy epifauna and presence of hard platform is consistent with the description of a KEF of the South-East bioregion, that is, shelf rocky reefs and hard substrates. Reefs provide habitat and shelter for fish and are important for aggregations of biodiversity and enhanced productivity (DoE, 2015). These are in deeper offshore waters and not accessible without a vessel suitable for offshore conditions and equipment that can reach the seabed in 60-80 m of water.

The operational area does not include an intertidal environment. Intertidal communities and shorelines include mangroves, macroalgae, seagrass, coastal saltmarsh, rocky and sandy shorelines. Intertidal reefs and sandy shorelines may be valued by First Nations people for their role in supporting culturally significant species. Intertidal communities and shorelines provide habitat and shelter to both marine and terrestrial fauna, including infauna and epifaunal invertebrates, fish and birds. Sea Country for Wadawurrung people includes coastal habitats such as seagrass and saltmarsh (Wadawurrung Traditional Owners Aboriginal Corporation 2020).

Potential disruption to cultural features

Impacts to benthic habitats, if at a widespread level, could disrupt intrinsic links between First Nations people and cultural heritage values of benthic habitats. Widespread changes have the potential to impact population levels of culturally significant species which might be available as a resource.

As evaluated in Section 8.3.1.2, change in benthic habitat in the operational area is expected to be localised, short-term and recoverable (Table 8-2). The area of impact is small compared to the extent and distribution of the benthic habitats identified within the Operational Area and wider region (Sections 6.0 and 1.0, and Table 8-2). Planned activity aspects will not impact on coastal benthic habitats; there would be no change to the level or diversity of resources available to First Nations people.

Changes to ecosystem functioning and integrity of intertidal communities and shorelines poses a potential risk to intrinsic links between First Nations people and the cultural heritage values of intertidal communities and shorelines. As summarised in Table 8-2, the introduction, establishment and spread of IMS has the potential for moderate inherent risk of either directly or indirectly impacting intertidal communities and shoreline habitats. With controls in place, impacts and risks from these aspects are not expected to result in widespread long-term impacts to intertidal communities and shorelines including ecosystem functioning and integrity. An accidental hydrocarbon release has the potential for more widespread impacts to benthic habitat within Sea Country and is more relevant in shallow coastal waters where there is higher potential for hydrocarbons to accumulate, and for benthic assemblages to be exposed over longer periods. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

Relevant First Nations groups will be engaged in the event of an accidental hydrocarbon release as specified in Section 6.8.5 Amplitude Energy maintains a list of key First Nations persons who have expressed an interest in playing a key role in the protection of cultural heritage during and the recovery of Sea Country in such emergency events. With controls in place, the risks from an accidental hydrocarbon release are not expected to result in widespread long-term impacts to Sea Country or impacts to ecosystem functioning and integrity, or species populations. As such, intrinsic links between environment receptors and First Nations peoples cultural heritage values is expected not expected to be disrupted long term and would be recoverable.

8.3.3.8 Marine Park/ coastal reserves / wetlands

Marine Parks, Coastal Reserves, and wetlands are protected areas which are managed for the primary purpose of conserving the biodiversity found in them, while sometimes also allowing for sustainable use of natural resources. First Nations people may have strong cultural associations with Sea Country and have cultural responsibilities of Country within Marine Parks and Reserves. Some First Nations groups including the Gunaikurnai people jointly manage the Marine Parks and reserves on Country. The Marine parks and reserves around Wilsons Promontory and Ninety Mile Beach National Park were inhabited Gunaikurnai ancestors and are important for the Gunaikurnai people's connection to Country (Gunaikurnai Land and Waters Aboriginal Corporation 2015). The Marengo Reef Marine Park holds cultural significance for the Eastern Maar people and is a habitat for culturally significant marine species (Eastern Maar Aboriginal Corporation 2014).

Potential disruption to cultural features

Changes to ecosystem functioning and integrity of Marine Parks, coastal reserves and wetlands poses a potential risk to intrinsic links between First Nations people and the cultural heritage values of these places.

There is no overlap between the operational area and Marine Parks, Coastal Reserves and wetlands of International and National Importance, therefore, there is no direct risk to intrinsic links between First Nations people and cultural heritage values associated with Marine Parks, Coastal Reserves, and wetlands for planned Activity aspects.

As summarised in Table 8-2, the introduction, establishment and spread of IMS and accidental hydrocarbon release has the potential for moderate inherent risk of either directly or indirectly impacting Marine Park, coastal reserve, and wetlands. Relevant First Nations groups will be engaged in the event of an accidental hydrocarbon release as specified in Section 6.8.5. The risk severity is considered to be the same for the Cultural Feature as for the Environment Receptors that are the cultural feature, or form part of the cultural feature (Moderate).

Amplitude Energy maintains a list of key First Nations persons who have expressed an interest in playing a key role in the protection of cultural heritage during and the recovery of Sea Country in such emergency events. With controls in place to prevent and mitigate impacts if they were to occur, aspects are not expected to result in widespread long-term impacts to Marine Parks, Coastal Reserves, or to wetlands, when considering ecosystem functioning and integrity. As such, intrinsic links between environment receptors and First Nations peoples cultural heritage values is not expected to be disrupted long term and would be recoverable.

8.4 Control Measures, ALARP, and Acceptability

Table 8-3 provide a summary of the control measures and ALARP and Acceptability Assessment relevant to interactions with cultural features of the environment relating to First Nations people's heritage sites and values.

Table 8-3: First Nations Heritage Values and Sensitivities ALARP, Control Measures and Acceptability Assessment

First Nations Heritage Values and Sensitivities	
ALARP Decision Context and Justification	**ALARP Decision Context: Type B** ALARP decision context B has been applied in relation to First Nations people cultural heritage because the Activity carries residual (Moderate) risks and Level 4 consequences in relation to environment receptors that are linked to First Nations Cultural Heritage, cultural features. Controls to manage residual risks from the Activity upon physical, biological and social environment receptors have been considered and established in Sections 6.0 and 1.0. Additional Controls have been considered, and selected for aspects, specifically in relation to the protection and recovery of the intrinsic links between environment receptors and cultural heritage, for those risks which are of Moderate risk severity, these are: • Underwater sound emissions (Section 6.5.5 and 6.6.4) • Introduction, establishment and spread of IMS (Section 6.7.4) • Accidental hydrocarbon release (Section 6.8.5). • The additional Control Measures are described below.
Additional Control Measure	**Source and Description of Control**
CM30: Underwater Cultural Heritage Disturbance Risk Management Measures	Amplitude Energy Cultural Heritage Disturbance Risk Management Measures acknowledge legislative requirements and establishes the methods by which potential disturbance to cultural heritage is identified including via screening, consultation, and expert advice as required. The measures apply to the offshore Activity to ensure impacts and risks throughout the Activity remain within acceptable levels and are managed to ALARP. In accordance with advice from Heritage Victoria and DPC during Activity consultation, and in line with the UCH Guidelines (DCCEEW 2024d), prior to commencement of well construction activities a suitably qualified and experienced cultural heritage team will review geophysical data gathered during seabed surveys (refer CM16 Seabed Survey) for underwater cultural

First Nations Heritage Values and Sensitivities	
	heritage and allow for the consideration of underwater cultural heritage and landscapes in final infrastructure locations so that it is avoided by the subsequent drilling activities, with a suitable exclusion area. The team will include a marine archaeologist and will also have familiarity with first Nations cultural landscapes and experience in identifying landscape features from geophysical data. Any subsequent management advice (e.g. exclusion zones) will be provided to Heritage Victoria and accounted for within Activity installation procedures. If cultural heritage is identified, it will be mapped, along with suitable exclusion area and its location integrated into Activity inductions and procedures to ensure it is avoided during Activity.
CM29: Engagement During Emergency Response	Engagement with relevant First Nations Representatives in the event of a loss of containment of hydrocarbons which may extend to coastlines to obtain advice on the management of cultural sensitivities which may be in the spill trajectory. Consultation in the event of a spill will ensure that relevant First Nations peoples are involved in the protection of cultural features that may be in the spill trajectory, and that government agencies support the protect and deflect strategy thus minimising potential impacts and risks to sensitivities. Engagement with relevant State Agencies and First Nations groups in the event of a spill, with information provided on an as-needed basis, to identify and protect cultural heritage sites from disturbance associated with spill response activities. The Eastern Maar, Gunditj Mirring, Wadawurrung and Gunaikurnai Indigenous groups were consulted. The Wadawurrung group felt that, given the location of the operation activities, further consultation was not required. The Eastern Maar and Gunaikurnai Aboriginal Corporations would like to be contacted in the event of a spill which could impact shorelines, to provide cultural heritage advice. Additionally, the Gunditj Mirring Traditional Owners Aboriginal Corporation requested to play a role in oil spill response activities.
Impact and Risk Summary	
Residual Impact Consequence	**Level 2** - Localised short-term impacts to components of the environment which are linked to cultural values and sensitivities. *Planned activities and impacts will not disrupt cultural linkages with the environment.*
Residual Risk Consequence	• Underwater sound: **Level 2** • Introduction and Spread of IMS: **Level 4** • Accidental Hydrocarbon release: **Level 3** • Spill Response: **Level 3** • Unplanned discharges chemical and hydrocarbon LOC: **Level 2** • Unplanned discharges waste: **Level 2** • Interaction with marine fauna: **Level 2**
Likelihood	• Underwater sound: **Possible (C)** • Introduction and Spread of IMS: **Remote (E)** • Accidental Hydrocarbon release: **Unlikely (D)** • Unplanned discharges chemicals and hydrocarbons LOC: **Unlikely (D)** • Unplanned discharges waste: **Unlikely (D)** • Interaction with marine fauna: **Unlikely (D).**

First Nations Heritage Values and Sensitivities	
Residual Risk	Moderate or lower for all aspects Potential long-term changes to cultural features associated with IMS and major hydrocarbon spills, though expected to be ultimately recoverable with involvement of First Nations peoples in the response to incidents, and repair of environment receptors and associated cultural features.
Demonstration of Acceptability	
Principles of ESD	Impacts from planned activities are assessed as having no greater than Level 2 consequence, which is not considered as having the potential to result in serious or irreversible environmental damage. In relation to intrinsic links to First Nations people's heritage sites and values; no disruption to these links are expected. Consequently, no further evaluation against the principles of ESD is required. The risk events associated with the activity are up to Moderate Severity, Level 4 consequence, though remote likelihood. Because of the Level 4 consequence, assessment against the principles of ESD is required. The level 4 consequence relates specifically to the risk of introducing, the spread and establishment of IMS. With the established processes in place, there is little residual uncertainty associated with the risk of IMS introduction, spread and establishment, as the activities are well known and well-practiced in the region, the cause pathways are well known, and risks are well regulated and managed under Australian biosecurity laws and guidance, and specific risk treatment measure (IMS Risk Management Protocol) developed by Amplitude Energy which operationalises the laws and guidance. Where ecosystem functions could be affected, and which could impact on resource distribution; these changes would be expected to be ultimately recoverable with involvement of First Nations peoples in the response to incidents, and repair cultural features of the environment. It is not considered that there is significant scientific uncertainty associated with this aspect. Therefore, the precautionary principle has not been applied beyond the precautionary measures already integrated into the IMS Risk Management Protocol.
Legislative and Conventions	• OPGGS Act • *Underwater Cultural Heritage Act 2018* • EPBC Act 1999 and EPBC Regulations 2000 • EPBC Act Listed Species Recovery Plans (including Blue Whale and Southern Right Whale), and species listing advice for Humpback whales • *Climate Change Act 2022* (Cwth) • *National Greenhouse and Energy Reporting Act 2007* (Cwth) • Paris Agreement • AMSA Marine Order 3 [Seagoing qualifications] • AMSA Marine Order 30 [Prevention of collisions] • AMSAs Marine Order 91 [Marine Pollution Prevention – oil] • OPGGS(E)R – Amplitude Energy Victorian OPEP (VIC-EPER-EMP-0001) • OPGGS(E)R- Amplitude Energy OSMP (VIC-ER-EMP-0002) • *Navigation Act 2014* - Notifications
Internal Content	Relevant management system processes adopted to implement and manage hazards to ALARP include: • Risk Management (MS03)

First Nations Heritage Values and Sensitivities	
	• External Affairs, Investor Relations, Community and Stakeholder Management (MS05) • Technical Management (MS08) • Health Safety and Environment Management (MS09) • Supply Chain and Procurement Management (MS11) Activities will be undertaken in accordance with the Implementation Strategy of this EP.
External Context	• Gunditjmara Nyamat Mirring Plan 2023 – 2033 (Gunditjmara Sea Country Plan) (Gunditj Mirring Traditional Owners Aboriginal Corporation 2023) • Eastern Maar Meerreengeeye Ngakeeppoorryeeyt (Eastern Maar Aboriginal Corporation 2014) • Paleert Tjaara Dja Let's make Country good together 2020 – 2030 – Wadawurrung Country Plan (Wadawurrung Traditional Owners Aboriginal Corporation 2020) • Gunaikurnai Whole-of-Country Plan (Gunaikurnai Land and Waters Aboriginal Corporation 2015). • Underwater Cultural Heritage Guidelines for Offshore Developments (DCCEEW 2019) • Assessing and Managing Impacts to Underwater Cultural Heritage in Australian Waters. Guidelines on the application of the UCH Act 2018 (DCCEEW 2024d) • Consultation: All relevant persons, including First Nations Organisations and peoples have been identified, or provided the opportunity to self-identify, including, though not limited to, groups and individuals located in areas adjacent to the operational area, and areas which could be affected in the event of a hydrocarbon spill. Relevant persons, including First Nations peoples, have been provided with information on the activity, and where applicable, in a format requested by them. Amplitude Energy continues to provide opportunities to engage on the activities described in this plan. Section 11.0 provides a summary of all consultation undertaken for the activity. Feedback received during consultation which has informed this EP, and the management of impacts and risks includes: – Information from GMTOAC in relation to cultural heritage sites and values that are important to them; these were eel migration, whale migration, the Bonney Upwelling System and associated productivity, and Deen Maar. These sites and values align with the Gunditjmara Sea Country Plan. – Advice from Heritage Victoria and DPC was sought during consultation. Advice from Heritage Victoria related to the potential presence of UCH, the collection of seabed data, and reducing the uncertainty as to the presence of and impacts to cultural heritage. This has resulted in adapting control measures to provide for additional specialist UCH advice and review relevant seabed data prior to drilling, to reduce uncertainty.
Acceptability Outcome	Acceptable • The Activity aspects will not impact the intrinsic links of First Nations people to the Environment. The activity is not expected to have a significant impact (e.g. changes in population levels, ecosystem function, physical oceanography of the region) on cultural features of the

First Nations Heritage Values and Sensitivities	
	environment (e.g. eels, whales, upwelling systems) relating to First Nations people's heritage sites, values, and cultural practices. • Whilst the activity will contact the seabed, the risk of disturbing potential cultural heritage is considered to be low given the offshore location of the activities and localised and temporary nature and scale. The (Low) risk of disturbing cultural heritage within the operational area is further reduced by recording, reporting and assessing any anomalies identified on the seabed before they are disturbed. • The potential risks of the activity associated with unplanned events including IMS introduction, establishment and spread, and accidental hydrocarbon release, are preventable. These risks are managed to ALARP, and any impact to intrinsic links are expected to be ultimately recoverable with the involvement of respective First Nations people, and acceptable if the adopted controls are implemented. To manage impacts to receptors to or below the defined acceptable levels the following EPOs have been applied: EPO23: No impact to underwater cultural heritage.

Table 8-4: Potential Impacts to Cultural Features - extended ALARP Assessment

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
Management of Knowledge and Change	Disruption to cultural link to, or practice associated with, a component of the environment	By continuing to enable engagement Cooper Energy can modify control measures according to new information which may become available.	Yes	Administrative effort and travel	No new risks introduced	Implement. Refer to description of MOC process within the Implementation Strategy of this EP.
Record and Report Marine Mammal Observations	Disruption to cultural link to, or practice associated with, a component of the environment	Provides data which can be viewed by interested persons. May assist alleviate any concerns in relation to the activity affecting whale migration and links to cultural practices such as 'calling in whales'	Yes	Administrative effort	No new risks introduced	Implement. Refer to reporting requirements within the Implementation Strategy of this EP. This conclusion is responsive to consultation with GMTOAC for the approved Athena Supply Project Environment Plan (**Athena Supply Project**) and their particular interest in eel migration. Refer to consultation ID: FN-GMTOAC-20240214-Email This requirement has been included within Implementation Strategy Section 12.12
Record and make available observations of culturally significant	Disruption to cultural link to, or practice associated with, a	May be of interest to First Nations Groups and their research	N/A – not typically reported	Administrative effort	No new risks introduced	Implement. Added to reporting requirements within the

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
species to First Nations Groups	component of the environment	partners, to build on existing knowledge.				Implementation Strategy of this EP. This conclusion is responsive to consultation with GMTOAC for the approved Athena Supply Project Environment Plan (**Athena Supply Project**) and their particular interest in eel migration. Refer to consultation ID: FN-GMTOAC-20240214-Email. This requirement has been included within Implementation Strategy Section 12.12**.**
Tag and track any eels observed by activity ROVs	Disruption to cultural link to, or practice associated with, a component of the environment	May be of interest to GMTOAC and their research partners, to build on existing knowledge of how and when eels disperse through the Bass Strait.	No precedents for activities of this nature/scale	Significant planning effort and field work and associated additional costs. Specialist researchers required to develop and implement tagging program extending overall time of the activity offshore.	Potential to cause harm to eels, and damage equipment. Not practicable in the offshore environment to capture and tag eels with ROV	Reject. Not possible.
Engagement of First Nations peoples during Emergency Spill Response	Disruption to cultural link to, or practice associated with, a	By engaging First Nations peoples during spill response, the response can be	Yes	Administrative effort to maintain contact details. Additional costs associated with	No new risks introduced	Implement. Included as a Control Measure within the OPEP.

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
	component of the environment.	managed to account for and protect cultural values and sensitivities in a culturally appropriate way.		meeting fees (as applicable) Additional cost to engage First Nations peoples during a spill response.		This conclusion is responsive to consultation with GMTOAC for the approved Athena Supply Project Environment Plan (**Athena Supply Project**) and their particular interest in recovery of Country in response to disasters. CM29 includes this requirement to engage with relevant First Nations Representatives in the event of a loss of hydrocarbons which may extend to coastlines to obtain advice on the management of cultural sensitivities. Refer to consultation ID: FN-GMTOAC-20240405-Email.
Project inductions to all relevant marine crew include information on the cultural links with elements of the environment that may be observed in the operational area, including whales.	Disruption to cultural link to, or practice associated with, a component of the environment.	By providing information on the cultural heritage aspects which may occur in the activity area the marine crews understanding of the importance and significance of these things may be	Yes	Administrative effort / travel to prepare / deliver inductions to marine crew.	Risk of sharing information that is culturally sensitive. Mitigation: only provide information that is publicly available.	Implement. Added to induction requirements within the Implementation Strategy of this EP.

Additional Control Measures Considered	Related Risk Event	Benefit	Recognised Good Practice?	Sacrifice	Introduced Risks	Conclusion (Implement / Reject)
		enhanced and will be consistent across the team.				
Use of cultural heritage monitors on vessels to oversee implementation of controls protecting cultural values.	Disruption to cultural link to, or practice associated with, a component of the environment.	No benefit. Trained marine mammal observers will be established on vessels to implement MMO protocols. Risks to UWCH are considered Low given nature and scale of the activities (ref discussion with Heritage Victoria, 2024).	No precedents for activities of this nature/scale	Costs associated with training additional personnel for offshore work, medical checks, mobilisation.	Potential exceedance of vessel capacity (bed space). HSEC risks associated with working offshore.	Reject. Existing oversight and reporting established for the project is considered sufficient

9.0 Cumulative Impact Assessment

In the context of offshore petroleum activities cumulative environmental impacts are defined by the regulator, NOPSEMA, as successive, additive, or synergistic impacts of collectively significant activities or projects with material impacts on the environment that have the potential to accumulate over temporal and spatial scales (NOPSEMA Environment Plan Decision Making Guideline, N-04750-GL1721 A524696, Jan 2024).

The effects of past project activities, and currently operating activities, are captured when describing the existing condition of and any pressure or threats affecting the environment (refer to Section 4.0 Description of the Environment). This baseline condition and understanding of the capacity of the receiving environment and receptors to accommodate changes, considering existing pressures and threats, informs the environmental impact assessments conducted in Section 6.0.

The focus of the cumulative impact assessment is to build on these assessments by considering the potential impacts from the planned components of the proposed activity on key matters in conjunction with the potential impacts from other reasonably foreseeable future projects and activities. Impacts and risks from unplanned aspects have not been considered in the cumulative impact assessment. It is not reasonable to consider unplanned aspects for cumulative environmental effects, because of the low likelihood relating to unplanned events for the Annie-2 development well and other foreseeable future projects and activities.

The types of activities and projects typically considered in cumulative impact assessment (CIA) are large in scale and are of relevance in terms of potentially contributing to or compounding material impacts in the relevant project area. While an environmental value is at the centre of the CIA this doesn't mean that every potential impact of regional concern to that value needs to be addressed. For example, while loss of habitat to a threatened species may be of regional concern, there may be no reason to incorporate those potential impacts into a project-initiated CIA if the project under assessment does not contribute to long term habitat reduction (Minerals Council of Australia 2015). The scoping assessment is used to identify where the Annie 2 development well contributes to cumulative impacts which may be material.

In accordance with regulation 56 of the OPGGS(E)R (Sections 1.3.1and 2.0), this section of the EP refers to the accepted **ECSP OPP**. The accepted OPP is publicly available on the NOPSEMA website (Cooper Energy 2025). The OPP includes a cumulative impact assessment (CIA) of the ECSP Activities within Section 11 of the OPP (AEL 2025). Given the activities for the Annie-2 Development are a part of ECSP, the cumulative impact assessment (CIA) for the Activity within this EP is considered covered under the CIA detailed in the OPP.

The OPP identifies EPOs, control measures, EPSs, and measurement criteria that have been developed as part of a systematic approach to the management of environmental risks to address potential cumulative impacts. Amplitude Energy acknowledges the need for shared responsibility to manage cumulative impacts and will actively collaborate with other petroleum titleholders, share relevant data and promote coordinated efforts to ensure that all reasonably foreseeable activities adhere to acceptable environmental standards to mitigate cumulative impacts.

Amplitude Energy will communicate specific work programs with other the Otway Basin Petroleum Titleholders with the aim of minimising the potential for cumulative impacts associated with underwater sound, should activity timings potentially result in concurrent activities and overlap biologically important period (January to June) for blue whales (refer CM 11 and CM 15).

Any observation, incidents, and opportunities for improvement regarding the interaction with other users will be reported to other petroleum titleholders. This additional control has been adopted and

included against CM11: Titleholder Collaboration and CM15: Campaign Risk Review as updated in Section 10.0

9.1 Identify reasonably foreseeable future projects and activities

In accordance with CM27 within the OPP: *Each future EP resulting from the East Coast Project OPP will undertake a review for additional or significantly revised reasonably foreseeable projects. Additional or significantly revised projects will be assessed as per CIA methodology (Section 11.1 of the OPP). Any cumulative impacts from new, significantly revised or currently unknown activities that results in an unacceptable level of impact to receptors, will be subject to new or revised control measures within the appropriate EP to reduce cumulative impacts to ALARP.*

A review for additional or significantly revised reasonably foreseeable projects was undertaken in accordance with Section 11.1 of the OPP, refer Table 9-1. No additional or significantly revised reasonably foreseeable projects when compared with Section 11.2.1 of the OPP were identified as part of this review. As a result, the CIA in Section 11 of the OPP for the ECSP as a whole is considered a conservative, valid and appropriate CIA for the Activity within this EP.

Table 9-1: Reasonably foreseeable future projects or activities in the offshore Otway Basin.

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
Petroleum Activities					
Amplitude Energy [Cooper Energy]	Operations of the existing CHN facilities to the Athena Gas Plant since 2006 (CHN operations) (Cooper Energy, 2024). Includes regular vessel-based inspections, maintenance and repair; and well workovers using a MODU.	Existing	Ongoing End of field life ~2050	Yes – there is a potential temporal overlap of drilling the Annie 2 development well with CHN operations IMR campaigns. At the time of preparing this EP there is no planned IMR campaign concurrent with drilling activities. It is expected that future monitoring campaigns as described in this EP will be scheduled sequential with IMR campaigns for CHN Operations.	Yes – the Annie 2 development is adjacent to the existing CHN facilities, and will ultimately become part of the operating facilities. **Light EMBA** A 'localised (small radius of light glow around vessels)' assessed for Cooper's CHN activities (Cooper Energy, 2024a), could be entirely overlapped by the Annie 2 development well precautionary 49 km flaring EMBA. The CHN EMBA overlaps foraging BIAs for multiple bird species, including albatross and gannets. **Sound EMBA** Noise EMBAs (5.97 km marine mammal behaviour criteria during resupply) resulting from CHN Operation vessels overlap with those of this EP (refer Appendix 7 -). The CHN EMBA overlaps: • foraging BIAs for pygmy blue whale, including the annual high use area • migration BIA and reproduction BIA for southern right whale • distribution BIA for white shark (Cooper Energy, 2024a)
Beach Energy Limited	Operations of Halladale, Speculant, Geographe, Thylacine gas fields to the Otway Gas Plant (Otway	Existing	Ongoing End of field life ~2037	Yes – potential temporal overlap of IMR campaigns schedule with timing of drilling Annie 2 development well and	Yes – potential overlapping of Beach Otway operations underwater sound and light emissions EMBAs with Annie 2 development underwater sound and light emissions EMBAs. **Light EMBA** A precautionary 20 km light EMBA was applied by Beach (Beach,

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
	operations) (Beach, 2024). Includes regular vessel-based inspections, maintenance and repair. And well workovers using a MODU.			vessel campaigns, though there is also potential for activities to occur sequentially.	2024), which could overlap Annie 2 development well precautionary 49 km flaring EMBA. The Beach light EMBA overlaps • foraging BIAs for multiple bird species, such as albatross, petrels, and shearwater species, • breeding BIAs for the wedge-tailed shearwater, and • roosting BIAs for little curlew, pin-tailed snipe, and swinhoe's snipe **Sound EMBA** Modelling predicted the furthest sound contour distance for Beach IMR activities as 7.5 km to reach the noise effect criteria for behavioural effects in marine mammals (Beach, 2024) and this overlaps with those of this EP (Appendix 7 -). The Beach noise EMBAs overlaps: • the migration BIA for the southern right whale, • the foraging BIAs for the pygmy blue whale, including the annual high use area (Beach, 2024).
Amplitude Energy [Cooper Energy]	Exploration Drilling	Accepted	2025-2029 (~60 days per well, max 3 wells)	There is no potential overlap of the drilling of Annie 2 development well and the East Coast Project drilling activities.	No overlap.
ConocoPhillips	Exploration Drilling	Accepted	2025-2028 (typically, 30-40 days per well, max 6 wells)	Yes – potential overlap of ConocoPhillips drilling activities and vessel related activities of the Annie 2 development drilling activities.	Yes – potential overlap of underwater sound and light emissions EMBAs between ConocoPhillips exploration drilling activities and vessel related activities described in this EP.

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
				The Annie 2 development drilling activities will not occur concurrently with exploration drilling activities, however may occur sequentially.	The ConocoPhillips exploration drilling operational area (VICP/79 portion) is located adjacent to the Annie 2 development well operational area. **Light EMBA** A precautionary 49 km flaring associated light EMBA applied by ConocoPhillips (ConocoPhillips, 2024a) could overlap with a portion of the Annie 2 development drilling precautionary 20 km routine light EMBA. There will be no concurrent overlap of flaring EMBAs between the projects. Flaring for the drilling activity will be short-term (maximum of 100 hours), temporary and only required for 4 of the 6 proposed wells (ConocoPhillips, 2024a). ConocoPhillips flaring EMBA overlaps: • foraging BIAs for multiple bird species, such as several albatross, petrel, and shearwater species • breeding BIAs for petrel, shearwater, penguin and cormorant species • migration route for the orange-bellied parrot (ConocoPhillips, 2024a). **Sound EMBA** Modelling for ConocoPhillips activities predicted the furthest sound contour distance for exploration drilling activities within the operational area was 12.6 / 22.8 km non-shelf / on shelf edge locations to reach the noise criteria threshold for behavioural effects in marine mammals (ConocoPhillips, 2024a). Annie 2 development drilling noise EMBA only overlaps shelf areas. ConocoPhillips noise EMBAs overlaps: • foraging BIA for the pygmy blue whale • migration BIA for the southern right whale

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
					distribution BIA for the white shark (ConocoPhillips, 2024a).*
Woodside Energy	Minerva Decommissioning and Field Management	Accepted	2024-2025 Approximate duration is 90-120 days (Woodside, 2024).	The accepted EP describes the activities and being completed in 2025. The activity has not been completed at the time of preparing this EP, and Woodside are required to remove the remaining kit at the Minerva field on blocks VIC/L22 and VIC/PL33 by April 2028. Therefore there is potential for overlap of the Annie 2 development well activities with decommissioning at Minerva.	Yes – potential overlap of underwater sound and light emission EMBAs between Minerva decommissioning activities and Annie 2 development drilling activities. The Minerva decommissioning operational area is located adjacent to Annie 2 development drilling operational area. **Light EMBA** Woodside do not define a light EMBA outside of their operational area (Woodside, 2024). However, overlap associated with the light EMBAs for Annie 2 activities may occur due to the proximity of Minerva decommissioning operational area to Annie 2 development well. The precautionary 20 km routine light EMBA and/or the 49 km flaring EMBA for Annie 2 development drilling may overlap with the vessel activities within the Minerva decommissioning operational area. Woodside's operational area overlaps: • migratory route for the orange-bellied parrot • foraging BIAs for multiple bird species, such as several albatross, petrel, and shearwater species (Woodside, 2024). **Sound EMBA** Modelling for Woodside activities predicted the furthest sound contour distance for decommissioning activities within the operational area was 2.4 km (during equipment removal) to reach the noise criteria threshold for behavioural effects in marine mammals (Woodside, 2024). Noise EMBAs for the Annie 2 development well activities will not overlap those of the Minerva Decommissioning and Field Management activities.

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
					Woodsides noise EMBAs overlaps: • foraging BIA for the pygmy blue whale • migration BIA for the southern right whale (Woodside, 2024).
Woodside Energy	Minerva Plug and Abandonment	Accepted	2025 Approximate duration 40 – 160 days (Woodside, 2024)	No potential overlap, the Minerva Plug and Abandonment activities have been completed.	No potential overlap, the Minerva Plug and Abandonment activities have been completed.
Beach Energy Limited	Offshore Gas Victoria Drilling and P&A Activities	Proposed	2025-2028 Drilling: 30-40 days per well, max 5 wells P&A: 15-20 days per well, max 5 wells	Yes – potential overlap of planned impact EMBAs associated with Beach drilling and P&A activities and timings of Annie 2 development well activities (vessel campaigns). The drilling of Annie 2 development well will not occur concurrently with Beach Energy drilling and P&A activities, as the same MODU and vessels would be expected to be used for the respective activities of each Titleholder. However,	Yes – potential overlap of underwater sound and light emissions EMBAs between Beach drilling and P&A activities and Annie 2 development well activities. The Beach drilling and P&A operational area do not overlap with the Annie 2 development well operational area. **Light EMBA** A precautionary 20 km light EMBA applied by Beach (Beach, 2024a) could overlap with the Annie 2 development well precautionary 20 km routine light EMBA. There is no flaring allowed for under the Offshore Gas Victoria Drilling and P&A Activities EP (Beach, 2024a). Therefore, there will be no concurrent or consecutive overlap of flaring EMBAs. Therefore, concurrent overlap of the routine light EMBAs (20 km) is considered the main source for potential cumulative impact. Beach's light EMBA overlaps: • foraging BIAs for multiple bird species, such as several albatross, petrel, and shearwater species • likely migration route for the orange-bellied parrot

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
				the activities may occur in sequence.	• foraging BIA for the white shark (Beach, 2024a). **Sound EMBA** Modelling for Beach activities predicted the furthest sound contour distance for exploration drilling activities within the operational area was 19.6 km to reach the noise criteria threshold for behavioural effects in marine mammals (Beach, 2024a) and this overlaps with the noise EMBA for Annie 2 development drilling. Beach noise EMBAs overlaps: • foraging BIA for pygmy blue whale • migration BIA for southern right whale • distribution BIA for white shark (Beach, 2024a).
Beach Energy Limited	Geophysical/ Geotechnical Survey	Accepted	2024-2028	Yes – potential temporal overlap of planned impact EMBAs during geophysical survey and timing of Annie 2 development drilling activities. There is also potential for activities to occur sequentially.	Yes – potential overlapping of Beach Geophysical/Geotechnical surveys underwater sound and light emissions EMBAs with Annie 2 development drilling underwater sound and light emissions EMBAs. **Light EMBA** A precautionary 20 km light EMBA applied by Beach (Beach, 2024) could overlap the Annie 2 development drilling precautionary 49 km flaring EMBA. Beach's light EMBA overlaps: • foraging BIAs for multiple bird species, such as several albatross, petrel, and shearwater species • breeding BIAs for the little penguin, white bellied sea eagle, and short-tailed shearwater, and • roosting BIAs for little curlew, pin-tailed snipe, and swinhoe's snipe (Beach, 2024). **Sound EMBA**

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
					Modelling for Beach activities area predicted the furthest sound contour distance for geophysical surveys within the Otway operational area was 145 m to reach the noise criteria threshold for behavioural effects in marine mammals (Beach, 2023) and could overlap the noise EMBA for Annie 2 development drilling if activities occur concurrently. Beach's noise EMBAs overlaps: • migration BIA for the southern right whale, and • foraging BIAs for the pygmy blue whale, including the annual high use area (Beach, 2024).
CGG - Regia	Seismic Survey	Proposed	2024-2028 • 60 days acquisition • 90 days in field • One survey between November – May) or Two separate surveys April – June, and or September – November.	Yes – potential temporal overlap of planned impact EMBAs associated during seismic acquisition timeframe and timings of Annie 2 development drilling activities. There is also potential for the activities to occur sequentially.	Yes – potential overlapping of CGG-Regia underwater sound and light emissions EMBAs with Annie 2 development drilling underwater sound and light emissions EMBAs. **Light EMBA** The Annie 2 development drilling 49 km flaring associated light EMBA overlaps the precautionary 20 km light EMBA applied by CGG. CGG's light EMBA overlaps • foraging BIAs for multiple bird species, such as several albatross, petrel, and shearwater species (CGG, 2024). **Sound EMBA** Modelling for CGG activities predicted the sound contour distance to reach the noise criteria threshold for behavioural effects up to 44 km and overlap with the noise EMBA described in this EP. Results predicted a maximum distance of ~23 km for pygmy blue whale, and ~15 km for southern right whale. CGG's noise EMBA overlaps: • the migration BIA for the southern right whale, • the distribution and foraging BIA (annual high use area) for the pygmy blue whale, and

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
					• the foraging BIA for the Australian Fur-seal.
Beach Energy	Development of Artisan and La Bella gas fields (Beach, 2021).	Accepted OPP Proposed	2024-ongoing • Seabed assessments: up to 30 days • Drilling activities for production wells: 70 to 90 days per well • Plugging wells: 30 days per well Inspections and modifications to existing seabed infrastructure: 30 - 120 days per field.	Yes – potential temporal overlap during the development of Artisan and La Bella gas fields with timings of Annie 2 development drilling activities. There is also potential for activities to occur sequentially.	Yes – potential overlapping of Artisan and La Bella development activities' underwater sound and light emissions EMBAs with Annie 2 development drilling underwater sound and light emissions EMBAs. **Light EMBA** The precautionary 20 km light EMBAs applied by Beach will overlap the Annie 2 development drilling 49 km flaring EMBA during flaring. Beach's light EMBA overlaps: • foraging BIAs for multiple bird species, such as several albatross, petrel, and shearwater species (Beach, 2023). **Sound EMBA** Preliminary modelling for Beach predicted the furthest sound contour distance to reach the noise criteria threshold as <3-7 km for development activities (Beach, 2023). and this overlaps the predicted Annie 2 development drilling EMBA. Beach's sound EMBA overlaps: • foraging BIAs for pygmy blue whale, including annual high use area, • migration BIAs for southern right whale.
Offshore Wind					
Alinta Energy and JERA Nex (Spinifex Offshore Wind)	Construction, operation, decommissioning and associated surveys and monitoring for multiple offshore wind farms.	Feasibility licence	The licence was awarded in March 25. The project is in the pre-planning phase and as	Yes – potential temporal overlap of the Spinifex Offshore Wind installation with timings of Annie 2 development drilling activity. There is also	Yes – There is potential spatial overlap of underwater sound and light EMBAs associated with The Spinifex Offshore Wind installation and Annie 2 development drilling activities.

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
	The licence area is ~285 km^2 in size and expected to be a 1GW+ development in size. It is located ~24 km from the East Coast Project operational area.		such no specific details are currently publicly available for this installation. Suggested dates are: Surveys – ~2025 – 2028; Turbine Installation – ~2031; Typical operation period of 25 years (DCCEEW 2025).	potential for activities to occur sequentially.	**Light EMBA** Due to the early phase of development, no modelling has been completed to identify the light EMBA for The Spinifex Offshore Wind installation, however, the Annie 2 development well drilling activities predicted the light EMBAs to range from 20 - 49 km, depending on flaring, therefore an overlap could occur using a proxy 20 km EMBA. This proxy light EMBA for the licence area will overlap: • foraging BIAs for multiple bird species, such as several albatross, petrel, and shearwater species **Sound EMBA** Due to the early phase of development, there is no publicly available modelling to identify the sound EMBA for The Spinifex Offshore Wind installation. However, proxy modelling from comparative offshore windfarm designs (Norro et al., 2013) of ~20 km marine mammal behavioural threshold overlaps modelling for this EP. The Spinifex licence area overlaps: • foraging BIAs for pygmy blue whale, including annual high use area, • migration BIAs for southern right whale Given the nature and scale of the Annie 2 development well activities, and the control measures in place (designed with consideration to relevant species recovery plans), the additive effect of the Annie Development drilling activities are expected to be negligible.

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
Commercial Fisheries					
Bass Strait Central Zone Scallop Fishery	Towed dredge fishing method with managed seasonal / area closures and total allowable catch controls.	Active	July to 31 December each year.	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	No – The Annie 2 development well operational area overlaps with the fishery management area, however based on current fishing activity presence of fishing vessels in the operational area is unlikely. Potential overlap of underwater sound and light emissions EMBAs between fishing vessels and the Annie 2 development well activities is not expected. Refer to Table 4-4 for further information on commercial fisheries.
Eastern Tuna and Billfish Fishery	Fishing conducted using pelagic longline, minor line (such as handline, troll, rod and reel) method.	Active	Season goes all year, commencing on 1 January each year.	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	No – The Annie 2 development well operational area overlaps with the fishery management area, however based on current fishing activity presence of fishing vessels in the operational area is unlikely. Potential overlap of underwater sound and light emissions EMBAs between fishing vessels and the Annie 2 development well activities is not expected. Refer to Table 4-4 for further information on commercial fisheries.
Small Pelagic Fishery	Midwater trawl, purse seine and jigging and mine line methods are permitted for fishing.	Active	12-month fishing season commences 1st May each year	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	No – The Annie 2 development well operational area overlaps with the fishery management area, however based on current fishing activity presence of fishing vessels in the operational area is unlikely. Potential overlap of underwater sound and light emissions EMBAs between fishing vessels and the Annie 2 development well activities is not expected. Refer to Table 4-4 for further information on commercial fisheries.
Southern and Eastern Scalefish	Fishing conducted using demersal gillnet,	Active	12-month fishing season	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well	Yes – There is a potential that fishing vessels associated with this fishery may be actively fishing within or in proximity to the Annie 2 development well operational area and therefore there is

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
and Shark Fishery – Commonwealth Gillnet and Shark Hook Sector	demersal longline and auto-longline methods.		commences 1st May each year.	activities. There is also potential for activities to occur sequentially.	potential overlap of underwater sound and light emissions EMBAs. **Light EMBA** The localised (small radius of light glow) expected around fishing vessels may be overlapped by the Annie 2 development well if fishing occurs within the light EMBA. Modelling predicted the light EMBAs to range from 20 - 49 km, depending on flaring. The fishery may overlap: • foraging and breeding BIAs for multiple bird species, such as several albatross, petrel, and shearwater species. **Sound EMBA** The localised sound EMBA around the fishing vessel may be overlapped by the Annie 2 development well if fishing occurs within the sound EMBA. The fishery may overlap: • foraging, distribution and migrations BIAs for marine fauna, including cetaceans, pinnipeds, and sharks. However, given the spatial area of the fishery the overlap from the light and sound EMBAs will be relatively small compared to the area of available fishing grounds. Refer to Table 4-4 for further information on commercial fisheries.
Southern and Eastern Scalefish and Shark Fishery –	Multi-gear fishery.	Active	12-month fishing season commences 1st May each year.	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also	Yes – There is a potential that fishing vessels associated with this fishery may be actively fishing within or in proximity to the Annie 2 development well operational area and therefore there is potential overlap of underwater sound and light emissions EMBAs.

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
Commonwealth Scalefish Hook Sector				potential for activities to occur sequentially.	**Light EMBA** The localised (small radius of light glow) expected around fishing vessels may be overlapped by the Annie 2 development well activities if fishing occurs within the light EMBA. Modelling predicted the light EMBAs to range from 20 - 49 km, depending on flaring. The fishery may overlap: • foraging and breeding BIAs for multiple bird species, such as several albatross, petrel, and shearwater species. **Sound EMBA** The localised sound EMBA around the fishing vessel may be overlapped by the Annie 2 development well if fishing occurs within the sound EMBA. The fishery may overlap: • foraging, distribution and migrations BIAs for marine fauna, including cetaceans, pinnipeds, and sharks. Given the spatial area of the fishery, the overlap from the light and sound EMBAs will be relatively small compared to the area of available fishing grounds. Refer to Table 4-4 for further information on commercial fisheries.
Southern and Eastern Scalefish and Shark Fishery – Commonwealth Trawl Sector	Multi-gear fishery.	Active	12-month fishing season commences 1st May each year.	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	Yes – There is a potential that fishing vessels associated with this fishery may be actively fishing within or in proximity to the Annie 2 development well operational area and therefore there is potential overlap of underwater sound and light emissions EMBAs. **Light EMBA** The localised (small radius of light glow) expected around fishing vessels may be overlapped by the Annie 2 development well if

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
					fishing occurs within the light EMBA. Modelling predicted the light EMBAs to range from 20 - 49 km, depending on flaring. The fishery may overlap: • foraging and breeding BIAs for multiple bird species, such as several albatross, petrel, and shearwater species. **Sound EMBA** The localised sound EMBA around the fishing vessel may be overlapped by the Annie 2 development well if fishing occurs within the sound EMBA. The fishery may overlap: • foraging, distribution and migrations BIAs for marine fauna, including cetaceans, pinnipeds, and sharks. Given the spatial area of the fishery, the overlap from the light and sound EMBAs will be relatively small compared to the area of available fishing grounds. Refer to Table 4-4 for further information on commercial fisheries.
Southern Blue Fin Tuna Fishery	Pelagic longline and purse seine fishing gear is used in this fishery.	Active	12-month fishing seasons commences 1st December each year.	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	No – The Annie 2 development well operational area overlaps with the fishery management area, however based on current fishing activity presence of fishing vessels in the operational area is unlikely. Potential overlap of underwater sound and light emissions EMBAs between fishing vessels and the Annie 2 development well is not expected Refer to Table 4-4 for further information on commercial fisheries.
Southern Squid Jig Fishery	Single method of jigging.	Active	12-month fishing seasons commences 1st	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well	Yes – There is a potential that fishing vessels associated with this fishery may be actively fishing within or in proximity to the Annie 2 development well operational area and therefore there is

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
			December each year.	activities. There is also potential for activities to occur sequentially.	potential overlap of underwater sound and light emissions EMBAs. **Light EMBA** The localised (small radius of light glow) expected around fishing vessels may be overlapped by the Annie 2 development well if fishing occurs within the light EMBA. Modelling predicted the light EMBAs to range from 20 - 49 km, depending on flaring. The fishery may overlap: • foraging and breeding BIAs for multiple bird species, such as several albatross, petrel, and shearwater species. **Sound EMBA** The localised sound EMBA around the fishing vessel may be overlapped by the Annie 2 development well if fishing occurs within the sound EMBA. The fishery may overlap: • foraging, distribution and migrations BIAs for marine fauna, including cetaceans, pinnipeds, and sharks. Given the spatial area of the fishery, the overlap from the light and sound EMBAs will be relatively small compared to the area of available fishing grounds. Refer to Table 4-4 for further information on commercial fisheries.
Victorian Abalone Fishery	Hand collected by divers.	Active	12-month fishing season commences 1st April each year.	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also	No – The Annie 2 development well operational area overlaps with the fishery management area, however based on current fishing activity presence of fishing vessels in the operational area is unlikely. Potential overlap of underwater sound and light

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
				potential for activities to occur sequentially.	emissions EMBAs between fishing vessel and the Annie 2 development well is not expected. Refer to Table 4-4 for further information on commercial fisheries in Victorian state waters.
Victorian Rock Lobster Fishery	Baited pot collection method. Season is split into male and female open seasons.	Active	Female open season: Nov 16-May 31. Male open season: Nov 16 – 16 Sept	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	Yes – There is a potential that fishing vessels associated with this fishery may be actively fishing within or in proximity to the Annie 2 development well operational area and therefore there is potential overlap of underwater sound and light emissions EMBAs. **Light EMBA** The localised (small radius of light glow) expected around fishing vessels may be overlapped by the Annie 2 development well if fishing occurs within the light EMBA. Modelling predicted the light EMBAs to range from 20 - 49 km, depending on flaring. The fishery may overlap: • foraging and breeding BIAs for multiple bird species, such as several albatross, petrel, and shearwater species. **Sound EMBA** The localised sound EMBA around the fishing vessel may be overlapped by the Annie 2 development well if fishing occurs within the sound EMBA. The fishery may overlap: • foraging, distribution and migrations BIAs for marine fauna, including cetaceans, pinnipeds, and sharks. Given the spatial area of the fishery, the overlap from the light and sound EMBAs will be relatively small compared to the area of

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
					available fishing grounds. Refer to Table 4-4 for further information on commercial fisheries in Victorian state waters.
Victorian Giant Crab Fishery	Baited pot collection method with only one entrance and one chamber. Season is split into male and female open seasons.	Active	Female open season: Nov 16-May 29 Male open season: Nov 16 – 16 Sept	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	Yes – There is a potential that fishing vessels associated with this fishery may be actively fishing within or in proximity to the Annie 2 development well operational area and therefore there is potential overlap of underwater sound and light emissions EMBAs. **Light EMBA** The localised (small radius of light glow) expected around fishing vessels may be overlapped by the Annie 2 development well if fishing occurs within the light EMBA. Modelling predicted the light EMBAs to range from 20 - 49 km, depending on flaring. The fishery may overlap: • foraging and breeding BIAs for multiple bird species, such as several albatross, petrel, and shearwater species. **Sound EMBA** The localised sound EMBA around the fishing vessel may be overlapped by the Annie 2 development well if fishing occurs within the sound EMBA. The fishery may overlap: • foraging, distribution and migrations BIAs for marine fauna, including cetaceans, pinnipeds, and sharks. Given the spatial area of the fishery the overlap from the light and sound EMBAs will be relatively small compared to the area of available fishing grounds.

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
					Refer to Table 4-4 for further information on commercial fisheries in Victorian state waters.
Victorian Scallop Fishery	Using scallop dredge.	Active	12-month fishing season commencing 1st April.	Yes – potential temporal overlap of fishing vessel Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	No – The Annie 2 development well operational area overlaps with the fishery management area, however based on current fishing activity presence of fishing vessels in the operational area is unlikely. Potential overlap of underwater sound and light emissions EMBAs between fishing vessels and the Annie 2 development well is not expected. Refer to 4.4.3 for further information on commercial fisheries in Victorian state waters.
Victorian Octopus Fishery	Baited pots collection method.	Active	Year-round season	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	Yes – There is a potential that fishing vessels associated with this fishery may be actively fishing within or in proximity to the Annie 2 development well operational area and therefore there is potential overlap of underwater sound and light emissions EMBAs. **Light EMBA** The localised (small radius of light glow) expected around fishing vessels may be overlapped by the Annie 2 development well if fishing occurs within the light EMBA. Modelling predicted the light EMBAs to range from 20 - 49 km, depending on flaring. The fishery may overlap: • foraging and breeding BIAs for multiple bird species, such as several albatross, petrel, and shearwater species. **Sound EMBA** The localised sound EMBA around the fishing vessel may be

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
					overlapped by the Annie 2 development well if fishing occurs within the sound EMBA. The fishery may overlap: • foraging, distribution and migrations BIAs for marine fauna, including cetaceans, pinnipeds, and sharks. Given the spatial area of the fishery the overlap from the light and sound EMBAs will be relatively small compared to the area of available fishing grounds. Refer to Table 4-4 for further information on commercial fisheries in Victorian state waters.
Victorian Sea Urchin Fishery	Hand collection.	Active	12-month fishing season commencing 1st July each year.	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	No – The Annie 2 development well operational area overlaps with the fishery management area, however based on current fishing activity presence of fishing vessels in the operational area is unlikely. Potential overlap of underwater sound and light emissions EMBAs between fishing vessels and the Annie 2 development well is not expected. Refer to Table 4-4 for further information on commercial fisheries in Victorian state waters.
Victorian Wrasse Fishery	Hook and line collection.	Active	Year-round season.	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	Yes – There is a potential that fishing vessels associated with this fishery may be actively fishing within or in proximity to the Annie 2 development well operational area and therefore there is potential overlap of underwater sound and light emissions EMBAs. **Light EMBA** The localised (small radius of light glow) expected around fishing vessels may be overlapped by the Annie 2 development well if fishing occurs within the light EMBA. Modelling predicted the light

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
					EMBAs to range from 20 - 49 km, depending on flaring. The fishery may overlap: • foraging and breeding BIAs for multiple bird species, such as several albatross, petrel, and shearwater species. **Sound EMBA** The localised sound EMBA around the fishing vessel may be overlapped by the Annie 2 development well if fishing occurs within the sound EMBA. The fishery may overlap: • foraging, distribution and migrations BIAs for marine fauna, including cetaceans, pinnipeds, and sharks. Given the spatial area of the fishery Figure 4-30 the overlap from the light and sound EMBAs will be relatively small compared to the area of available fishing grounds. Refer to Table 4-4 for further information on commercial fisheries in Victorian state waters.
Bass Strait Central Zone Scallop Fishery	Towed dredge fishing method with managed seasonal / area closures and total allowable catch controls.	Active	July to 31 December each year.	Yes – potential temporal overlap of fishing vessel activities with timings of Annie 2 development well activities. There is also potential for activities to occur sequentially.	No – The Annie 2 development well operational area overlaps with the fishery management area, however based on current fishing activity presence of fishing vessels in the operational area is unlikely. Potential overlap of underwater sound and light emissions EMBAs between fishing vessels and the Annie 2 development well is not expected. Refer to Table 4-4 for further information on commercial fisheries.
Commercial Shipping					

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
Numerous shipping channels throughout the Otway Basin	The South-east Marine Region is one of the busiest shipping regions in Australia and Bass Strait is one of Australia's busiest shipping routes. The main shipping channel for vessels (e.g., cargo tankers) travelling between major Australian and foreign ports is located south of the Otway Development, about 75 km (40 nm) south of Warrnambool.	Active	All year round, about 3-4 vessels per day.	Yes – potential temporal overlap of shipping activities with timings of Annie 2 development drilling activities. There is also potential for activities to occur sequentially.	Yes – potential overlapping with underwater sound and light emissions. **Light EMBA** The localised (small radius of light glow) expected around shipping vessels may be overlapped by the Annie 2 development drilling activities if shipping comes within the light EMBA. Modelling predicted the light EMBAs to range from 20 - 49 km, depending on flaring. The Shipping activity throughout the Otway Basin may overlap: • foraging and breeding BIAs for multiple bird species, such as several albatross, petrel, and shearwater species. **Sound EMBA** The localised sound EMBA around the shipping vessel may be overlapped by the Annie 2 development drilling activities if shipping comes within the sound EMBA described in this EP. The Shipping activity throughout the Otway Basin may overlap: • foraging, distribution and migrations BIAs for marine fauna, including cetaceans, pinnipeds, and sharks. Given the spatial area of the shipping areas (Figure 4-42) the overlap from the light and sound EMBAs will be relatively small compared to the available shipping channels throughout the Otway Basin.
Defence					
King Island UXO	The King Island UXO was used during 1954 as an Air-to-Air Firing Range.	Existing	Ongoing	N/A	No – the Annie Development Drilling activities do not intersect any UXO sites.

Titleholder / Operator / Proponent	Activity Type	Status	Timing	Potential for Temporal Overlap	Potential for Spatial Overlap
	This area is classed as slight potential.				
Bass Strait Sea Dumping UXO	The Bass Strait Sea Dumping UXO area was used for the dumping of ordnance and other items in 1998-1999.	Existing	Ongoing	N/A	No – the Annie Development Drilling activities do not intersect any UXO sites.
Swan Island Defence Precinct	The Swan Island training area is located in the eastern side of Swan Island, near to Queenscliff in Victoria. It is a join training facility operated by the Australian Secret Intelligence Services.	Existing	Ongoing	Yes – potential temporal overlap of Swan Island Defence Precinct activities with timings of Annie 2 development drilling activities. There is also potential for activities to occur sequentially.	No – the Annie Development Drilling activities do not overlap with the Swan Island Defence Precinct. The large distance between the two areas prevents potential spatial overlap of underwater sound EMBAs.

9.2 Scoping assessment to identify relevant key environmental matters

In accordance with regulation 56 of the OPGGS(E)R (Sections 1.3.1and 2.0), this section of the EP refers to the accepted **ECSP OPP**. The accepted OPP is publicly available on the NOPSEMA website (Cooper Energy 2025).

The OPP includes a cumulative impact assessment (CIA) of the ECSP Activities within Section 11 of the OPP (AEL 2025). Given the activities for the Annie-2 Development are a part of ECSP, the scoping assessment to identify relevant key environmental matters presented in Table 11-2 of the accepted **ECSP OPP** is appropriate to support this aspect of the cumulative impact assessment (CIA) for the Activity within this EP therefore considered covered under the CIA detailed in the OPP.

9.3 Detailed cumulative impact assessment

In accordance with regulation 56 of the OPGGS(E)R (Sections 1.3.1and 2.0), this section of the EP refers to the accepted **ECSP OPP**. The accepted OPP is publicly available on the NOPSEMA website (Cooper Energy 2025).

Given that there has been no change to the foreseeable future projects and activities that may overlap with the Annie 2 development well activities since the preparation and acceptance of the **ECSP OPP**, and that the Annie-2 development well activity description is concordant with the OPP activity description (refer Table 14-3) Section 11.3 of the **ECSP OPP** the cumulative impact assessment (CIA) covers for the CIA for the Annie 2 development well activities (this EP).

10.0 Environmental Performance Outcomes, Standards, and Measurement Criteria

This section summarises the EPOs, standards, and measurement criteria that have been developed as part of a systematic approach to the management of environmental risks as identified in Section 6.0.

The EPOs, standards and criteria related to the Activity activities are shown in . Also shown are key responsible and accountable personnel who will ensure the EP is implemented and records of implementation retained.

The following legislative and guideline definitions are used in this section:

- EPOs – a measurable level of performance required for the management of the environmental aspects of the activity to ensure the environmental impacts or risks will be of an acceptable level.
- EPSs – a statement of performance required of an adopted control measure.
- Measurement criteria – defines the measure by which environmental performance will be measured to determine whether the EPO has been met.

A summary of the EPOs are listed in Table 10-1.

The associated control measures, EPSs, measurement criteria are listed in Table 10-2.

Table 10-1: Environmental Performance Outcomes

Reference	Environmental Performance Outcome
EPO1	Manage atmospheric emissions generated by activities defined in this EP in accordance with MARPOL Annex VI (Prevention of Air Pollution from Ships) enacted in the Navigation Act 2012, with no impacts to amenity outside of the operational area.
EPO2	Undertake drilling discharges management processes to reduce as far as practicable the overall volumes of WBDF discharged to the marine environment.
EPO3	Only approved chemicals (which meet low ecotoxicity pre-screening criteria or are further justified as ALARP) will be discharged to sea within project discharges.
EPO4	Use solids control equipment, when drilling with riser installed, to recover and limit discharge of excess drilling fluids (and SBDF on cuttings) to the environment.
EPO5	Manage discharge of residual bulks materials to the marine environment in accordance with Amplitude Energy's residual bulks management process.
EPO6	The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • Avoid areas of high relief outcrops, reefs, and sponge beds, where practicable. • Not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018.
EPO7	Planned vessel/ MODU discharges will meet AMSA Discharge Standards for operating in Australian waters.
EPO8	Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.
EPO9	Seabed disturbance is limited to the planned disturbance areas defined in this EP and within the operational area.
EPO10	Impacts to commercially targeted species will be limited to temporary[3] and localised[3] change in fauna behaviours. *[3] Temporary and localised change in fauna behaviours for commercially targeted species limited to activity durations and seabed disturbance footprint defined in Section 6.3.2.*

Reference	Environmental Performance Outcome
EPO11	Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within the EP for the Activity.
EPO12	Artificial light generated by the Activity will be managed to ensure biologically important behaviours of light-sensitive species that occur within the Activity light EMBA can continue while project activities are being undertaken, by applying relevant measures from the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023a), whilst meeting lighting requirements for safe navigation and work at night.
EPO13	GHG emissions related to the Project, including (scope 1 [Inside Project Boundary], scope 1* [Outside Project Boundary] and scope 3) emissions are consistent with Australia's international GHG emissions commitments, as outlined in the Climate Change Act 2022. Emissions are to be determined based on the NGER scheme and managed by the Safeguard Mechanism.
EPO14	EPO16: Impacts to marine fauna from underwater anthropogenic noise emissions will be limited to temporary* behavioural change localised** to the noise source. **Not exceeding the duration of the activity component (i.e. vessel campaign) (described in Section 6.5.2 and 6.6.2).* ***Not exceeding the noise EMBA defined for the activity (described in 6.5.2 and 6.6.2).*
EPO15	EPO17: No death or injury[1] to EPBC Act listed threatened, migratory or cetacean species. *[1]Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*
EPO16	Project related underwater noise within biologically important areas[1] and habitat critical to the survival of relevant species will be managed through the implementation of Amplitude Energy Offshore Victoria Whale Disturbance Risk Management Process, such that: • Any blue whale continues to utilise biologically important areas without injury and is not displaced from a foraging area. • Southern right whales are not prevented from utilising biologically important areas[2] or habitat critical to the survival of a species or cause auditory impairment[1]. • The risk of behavioural disturbance to southern right whales will be limited to temporary behavioural disturbance of individuals. *[1]Biologically important behaviours such as reproduction, feeding, migration and resting (DCCEEW, 2023a).* *[2]Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*
EPO17	For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable.
EPO18	Implement Fisheries Damages Protocol to provide a compensation mechanism to fishers who damage fishing equipment on Activity infrastructure outside of the PSZ.
EPO19	No unplanned release of chemicals or hydrocarbons to the marine environment.
EPO20	No unplanned release of waste to the marine environment
EPO21	No introduction, establishment or spread of invasive marine species
EPO22	No vessel strike with EPBC Act listed threatened, migratory or cetacean species.
EPO23	No impact to underwater cultural heritage
EPO24	No unplanned interactions between the project vessels and other marine users.

*In addition to EPO11 and EPO23, all the other EPOs to define the performance of Amplitude Energy in protecting First Nations Cultural Values and Sensitivities as identified in Section 4.4.4.

Table 10-2: Environmental Performance Outcomes, Standards and Measurement Criteria

EPO	Control	EPS	Measurement Criteria	Responsible Person
EPO19 **EPO24**	CM01: Marine exclusion and caution zones	EPS1.1: Marine exclusion and caution zones will not exceed distances required for safe operations. These zones, where established, will extend only as far as: • A temporary 3.5 km exclusion / cautionary zone around the MODU during the Activity, established via Notice to Mariners. • A temporary 500 m safety exclusion zone around the MODU, established via Notice to Mariners.	Notice to Mariners request placed with AHO to notify mariners of project caution/exclusion zones. .	Activity Manager
		• A 500 m PSZ gazetted around well, marked on navigational charts for awareness.	PSZ gazetted for Annie-2 development well does not exceed 500 m.	
EPO19 **EPO24**	CM02: Pre-start notifications	EPS2.1: AHO will be notified of activities where vessels will be in the Operational Area no less than 4 weeks to allow generation of Notice to Mariners (NTM).	Email records confirm notification of Annie2 development well activities within 4 weeks of commencement.	Activity Manager
		EPS2.2: AMSA's JRCC will be notified 24–48 hours before operations commence to enable AMSA to distribute an AUSCOAST warning. AMSA JRCC will be notified at the end of activities.	Email records confirm AMSA notification for Annie-2 development well activities within appropriate timeframe.	Vessel Master
EPO12 **EPO19** **EPO24**	CM03: Marine Assurance Process	EPS3.1: The vessels and MODU will meet navigational safety requirements under the *Navigation Act 2012* and associated Marine Orders, including but not limited to: • AMSA MO 21: Safety and emergency arrangements gives effect to SOLAS regulations dealing with life-saving appliances and arrangements, safety of navigation and special measures to enhance maritime safety. • AMSA MO 27 - Safety of Navigation and Radio Equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards. • AMSA MO 30 - Prevention of collisions requires that onboard navigation, radar equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards. • AMSA MO 70 - Seafarer certification meets the requirements for qualifications and training.	Vessel inspection records demonstrate compliance with the *Navigation Act 2012* and Marine Orders. Vessel Inspection records show vessel certification is in date.	Vessel Master OIM
EPO19 **EPO24**		EPS3.2: The vessels and MODU will adhere to navigational safety requirements under the *Navigation Act 2012* and associated Marine Orders, including but not limited to: • AMSA Marine Order 31 - SOLAS and non-SOLAS certification requires that vessels undertaking Annie-2 development well activities will have in date certification in accordance with AMSA Marine Order 31 (Vessel surveys and certification). • AMSA MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances – requires that vessels undertaking Annie 2 development well activities will have emergency plans to address pollution events (including containment and clean up) involving noxious liquids.	Vessel Inspection records demonstrate compliance with the *Navigation Act 2012* and Marine Orders Vessel Inspection records show vessel certification is in date.	
EPO1		EPS3.3: Vessels will comply with Marine Orders – Part 97: Marine Pollution Prevention – Air Pollution (appropriate to vessel class) for emissions from combustion of fuel including: • Hold a valid International Air Pollution Prevention (IAPP) certificate and have a current international energy efficiency certificate. • Have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI. • Engine NOx emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI. • Sulphur content of diesel/fuel oil complies with Marine Order Part 97 and Regulation 14 of MARPOL 73/78 Annex VI.	Premobilisation checklist (or current OVIS or equivalent) confirms: • Valid IAPP certificate and current international energy efficiency certificate • SEEMP in place (as appropriate to class) • NOx emission levels comply with regulations • Bunker receipts verify use of low sulphur fuel.	
EPO7 **EPO19** **EPO20**		EPS3.4: All discharges will comply with relevant MARPOL 73/78, *Navigation Act 2012*, *Protection of the Sea (Prevention of Pollution) Act 1983* and subsequent Marine Order requirements (as appropriate for vessel classification): • 2017 Guidelines for the Implementation of MARPOL Annex V to assist shipowners, masters and crews in applying the Annex V discharge requirements. • AMSA MO 91 - Marine Pollution Prevention (Oil)	Pre-mobilisation checklist (or current OVIS or equivalent)/ inspection records for vessel and MODU (as appropriate for vessel class) confirms: • Current International Oil Pollution Prevention (IOPP) certificate	

EPO	Control	EPS	Measurement Criteria	Responsible Person
		• Bilge water treated via a MARPOL (or equivalent) approved oily water separator and only discharge if oil content less than 15 ppm.	• Oil record book maintained and current with all discharges and transfers • Oily water separator is present.	
		EPS3.5: In accordance with MARPOL Annex I and AMSA MO 91 [Marine Pollution Prevention – oil], a Shipboard Marine Pollution Emergency Plan (SMPEP) or Shipboard Oil Pollution Emergency Plan (SOPEP) (according to class) is required to be developed. To prepare for a spill event, the SMPEP/SOPEP details: • Response equipment available to control a spill event. • Review cycle to ensure that the SMPEP/SOPEP is kept up to date. • Testing requirements, including the frequency and nature of these tests. In the event of a spill, the SMPEP/SOPEP details: • Reporting requirements and a list of authorities to be contacted. • Activities to be undertaken to control the discharge of hydrocarbon. Bunkering / bulk liquids will be transferred in accordance with operational procedure(s) to reduce the risk of an unintentional release to sea during transfer.	Vessel Inspection records confirm approved SOPEP or SMPEP. Records of vessel spill exercises being completed as per schedule.	
		EPS3.6: The vessels and MODU will meet AMSA MO 95 - Marine Pollution Prevention (Garbage), MARPOL 73/78 Annex V which requires that a garbage management plan and garbage record book is in place and implemented to manage waste offshore. Requirements include: • Segregating waste on the MODU / vessels. • Storing solid wastes in designated areas before sending them to shore for recycling, disposal, or treatment. • Waste receptacles that contain light-weight, solid waste will be covered to prevent waste from blowing overboard. • No discharge of waste or plastic products from general operational or maintenance.	Pre-mobilisation checklist (or current OVIS or equivalent)/ inspection records for vessel and MODU (as appropriate for vessel class) confirms: • A Garbage Management Plan is on board marine vessels (as relevant to vessel class and type) that includes for the requirements in EPS3.6. • Current and completed Garbage Record Book outlining waste discharge in accordance with AMSA MO 95 (as relevant to vessel class and type).	
		EPS3.7: Vessels will comply with AMSA MO 96 - Marine Pollution Prevention (Sewage), Requirements for offshore discharge of sewage have been incorporated into the MARPOL 73/78 sewage discharge control measure. Sewage discharged at sea is done so only in accordance with AMSA discharge standards and treated via a MARPOL (or equivalent) approved sewage treatment system as applicable. Food waste only discharged in accordance with AMSA, MARPOL when: • Vessel is en route and >12 nm from land. • Food waste is comminuted or ground to <25 mm and vessel is en route and >3 nm from land. • Food waste is comminuted or ground to <25 mm and platform is >12 nm from land.	Pre-mobilisation checklist (or current OVIS or equivalent)/ inspection records for vessel and MODU (as appropriate for vessel class) confirms: • Valid International Sewage Pollution Prevention (ISPP) Certificate demonstrating the vessel has a MARPOL approved sewage treatment plant (as relevant to relevant to vessel class and type). • If there is no MARPOL approved sewage treatment plant, records of sewage treated using an approved comminuted and disinfecting system are maintained in an Official Log Book (or similar) that records discharge locations and volumes in accordance with AMSA MO 95 (as relevant to vessel class and type). • Certification documentation. • Vessel and MODU logs confirm location and grinding status / size of discharges.	
EPO20		EPS3.8: Vessel cargo will be loaded, stowed and secured in accordance with AMSA Marine Order 42 (Carriage, Stowage and Securing of Cargoes and Containers).	Vessel and rig inspection records confirm cargo appropriately stored.	
EPO19		EPS3.9: From 1 January 2026 applicable vessels will not use or store firefighting foams containing PFOS, as adopted by the International Maritime Organisation (IMO).	Pre-mobilisation vessel inspection records confirm firefighting foams do not contain PFOS.	
EPO7 **EPO19** **EPO20**		EPS3.10: Equipment used to treat discharges to AMSA standards is installed and operational on the Vessels and MODU (as relevant to class), or otherwise the respective discharges do not occur.	Pre-mobilisation vessel inspection records confirm compliance with EPS3.10.	
EPO10 **EPO24**	CM04: Fisheries Damage Protocol	EPS4.1: A Fisheries Damage Protocol (developed with SETFIA) is in place to provide a compensation mechanism to fishers who damage fishing equipment on Activity infrastructure outside of a PSZ. The protocol was established in collaboration with SETFIA (fisheries peak body).	Consultation records show Fisheries Damage Protocol has been followed for fishers seeking compensation.	Chief Operating Officer

EPO	Control	EPS	Measurement Criteria	Responsible Person
		The protocol includes: • An incident report form with prompts for details of fishing activities, sea state, details of any damaged gear, details of repairs required, photos, dates and times. • Commitment for initial response to claimant within 4 working days confirming details. • The mutually agreed process for selecting the Tribunal (an independent assessor), whose decision is final and binding. • Requirement for Tribunal to be formed within 21 days of initial notification to undertake assessment of evidence and determine fault and damages payable.		
		EPS4.2: In event that the Tribunal determines compensation is payable under the Fisheries Damage Protocol: • Payment will be made within 14 days of that decision. • A deed of release is provided to the claimant where compensation is payable, in the form provided for in the Protocol (schedule 5).	Tribunal determination document outlining reasons for the determination. Records showing provision of deed of release. Record of payment.	
EPO18 **EPO19** **EPO24**	CM05: Ongoing consultation	EPS5.1: Further engagement will take place during the development and implementation of component EPs. This will include: • Details relating to notification of third-party stakeholders. • Engagement with other titleholders in the Otway with respect to each other's ongoing activities and potential cumulative impacts. • Relevant information received will be included within the EPs as appropriate.	Notification records demonstrate stakeholders are notified during development and implementation of this EP as per the Annie-2 EP stakeholder notifications register. Communication records with other Otway operators. Notification records follow the requirements of Section 12.12.	Activity Manager
		EPS5.2: Notification of activity commencement and completion to relevant stakeholders as per notifications register.	Consultation records demonstrate that relevant stakeholders have been notified prior to commencement and following completion of the activity as per the Annie-2 EP stakeholder notifications register.	
		EPS5.3: Any complaints received by Amplitude Energy from other marine users in relation to air quality will be investigated and outcomes shared with the person who made the complaint.	Incident records available for any air quality events. Consultation records with complainant include sharing of investigation outcomes and actions undertaken.	
		EPS5.4: Notifications for any on-water activities and ongoing consultations undertaken per Section 12.12.	Notification records follow the requirements of Section 12.12.	
		EPS5.5: Observation, incidents, and opportunities for improvement regarding the interaction with other marine users will be reported to other petroleum titleholders.	Notification records. Consultation records.	
EPO12	CM06: Light Management Measures	EPS6.1: MODU and vessel lighting will be limited to the minimum required with the exception of emergency events for navigational and safety requirements'. MODU and the vessels will implement light management measures developed with consideration to the National Light Pollution Guidelines for Wildlife, these include, but are not limited to: • Outward facing lights will be reduced to minimum levels required for a safe work environment. • Directions to minimise the use of non-essential lights (e.g. close blinds, turn off lights when leaving a room) will be included in MODU and vessel inductions. • Recording and reporting of any seabirds found on the MODU or vessels in need of care. • Procedures to manage and care for any seabirds found on board requiring care, including remote advice from Zoos Victoria Marine Response Unit (MRU) or equivalent.	Induction pack for MODU and vessels includes light management measures and seabird reporting process. Seabird management procedure in place which includes care and response strategies. Daily vessel / MODU logs report seabirds found on vessels/ MODU. MRU or equivalent advice documented in event stranded seabird requires care.	OIM Vessel Master
EPO11 **EPO12** **EPO13**	CM07: Well Testing Program	EPS7.1: Periods of flaring will not exceed 36 hours or flow rate of 60 MMscfd.	Operational log confirms periods of flaring do not exceed 36 hours and do not exceed rate of 60 MMscfd.	Activity Manager
		EPS7.2: Confirm flare tip is clear of birds prior to commencing flaring.	Completed flare watch check list records.	
		EPS7.3: Well Test Program will provide for: • A burner which atomises hydrocarbons to yield smoke free combustion will be used to burn-off gas and condensate returned from the well. • Burner & flare have redundant pilots.	Well Test Program uses smoke free combustion burner. Well Test Program uses burner and flare with redundant pilots. Equipment Design and Certification includes burner that results in smoke free combustion.	
		EPS7.4: Well Test Program will provide for: • The flare tip will be monitored while flaring occurs.	Well Test Report confirms flaring activity is managed in accordance with EPS8.4.	

EPO	Control	EPS	Measurement Criteria	Responsible Person
		• Burner pilots are ignited before and during flow back activities to minimise dropout from the flare. • Dedicated crew members will be on flare watch while flaring is undertaken to identify dropout and notify the well test team to cease or modify the well test to eliminate dropout.		
EPO1 **EPO13**	CM08: Planned Maintenance System	EPS8.1: Planned maintenance will be implemented throughout the activity. This ensures that critical equipment on vessels and MODU will be maintained in manufacturer's instructions and ongoing maintenance to ensure efficient operation including: • Combustion Equipment (Vessels).	Vessel PMS records confirm compliance with PMS for Combustion Equipment.	Vessel Master / OIM
EPO7		EPS8.2: Planned maintenance will be implemented throughout the activity. This ensures that critical equipment on vessels and MODU will be maintained in manufacturer's instructions and ongoing maintenance to ensure efficient operation including: • equipment involved in discharge management	HSE inspection records and daily logs show ongoing planned maintenance in compliance with PMS.	
EPO14 **EPO15** **EPO16**		EPS8.3: Equipment and propulsion systems generating impulsive or continuous sound emissions will be operated in accordance with manufacturer's instructions and ongoing maintenance in accordance with vessel and MODU's planned maintenance system, to ensure efficient operation.	HSE inspection records and daily logs show ongoing planned maintenance in compliance with PMS.	
EPO4	CM09: Offshore Equipment	EPS9.1: Solids control equipment (MODU) is installed and operational once BOP is in place on the well to enable recovery and re-use of drilling fluids, to reduce volumes discharged.	MODU inspection records confirm solids control equipment is in use when drilling through the BOP.	OIM
EPO3	CM10: Amplitude Energy Offshore Chemical Assessment Procedure	EPS10.1: The Amplitude Energy Offshore Chemical Assessment Procedure will be used to ensure that project chemicals with the potential to be discharged to sea are not of unacceptable risk. This will be done by: • preferentially selecting products that are on the current OSPAR PLONOR list, and/or • are rated Gold/Silver/E or D under the UK OCNS, and do not have a substitution warning, or, • have a completed a hazard assessment confirming they are not of unacceptable risk (toxic, very bioaccumulative (and bioavailable), and highly persistent), and are justified by technical need and analysis of alternatives.	Amplitude Energy Offshore Chemical Assessment Procedure. Completed and approved chemical assessment. Operational reports show discharge of only approved chemicals.	Activity Manager
		EPS10.2: An accepted chemical list will be issued to the offshore project team detailing which products may be discharged and in what circumstances.	Completed and approved chemical assessment and distribution records.	Activity Manager
EPO5	CM11: Titleholder Collaboration	EPS11.1: Amplitude Energy will continue to engage in industry collaboration efforts relating to the management of unused bulks.	Records which demonstrate Amplitude Energy involvement in industry collaboration efforts.	
EPO15 **EPO16**		EPS11.2: Amplitude Energy will share sightings data with other Titleholders in the Otway region and local research organisations to help inform each other's programs of work and respective risk reviews.	Data transfer records include sightings data.	
EPO2	CM12: Inventory Management	EPS12.1: Solids control equipment will be used as part of the drilling fluid circulation system when drilling with riser installed, to help condition the drilling fluid for reuse, and minimise the overall volumes of drilling fluid discharged. At the end of the Activity unused bulks (barite, bentonite, cement) will be managed in accordance with Figure 12-9. Upon completion of the activity excess dry bulks will be managed with one of the following: • retained onboard for future activity where acceptable by the subsequent operator or, • use up cement via increasing the volume used in the well, if design allows, • returned to shore where feasible, where considered ALARP after risk assessment during the execution phase, and where permitted by the MODU and vessel operator safe systems of work. Spare chemical additives will be retained on board where acceptable by the subsequent operator or returned to shore. In the event the re-use and return-to shore options are not feasible and ALARP then discharges of bulks will be: • Slurrified with water prior to release overboard to facilitate dispersion. • Limited to 50m^3 of dry bulk per batch of slurry released to facilitate dispersion. • Released no closer to shore, and in water depths no shallower than, the location of the well being constructed, to ensure impacts remain within the parameters assessed within the EP.	Pre-mobilisation MODU inspection records confirm solids control equipment present. Bulk transfer records demonstrate that the process outlined in Figure 12-9 was followed for the management of unused bulks. Waste/Materials transfer records show spare chemical additives are returned to shore, and excess dry bulk materials returned to shore where feasible. Execution phase risk assessment of returning cement to shore. Discharge logs confirm location and volume of any released overboard.	Activity Superintendent
		EPS12.2: Barite concentrations will be at or below: • Mercury (Hg) – 1 mg/kg (1 ppm) dry weight in stock barite. • Cadmium (Cd) – 3 mg/kg (3 ppm) dry weight in stock barite.	Drilling muds inventory shows contaminant limits for Barite are not exceeded.	Vessel Master / OIM

EPO	Control	EPS	Measurement Criteria	Responsible Person
		EPS12.3: Detailed cementing procedures will be developed and implemented before cementing activities commence.	Cementing Program / Cementing Plan of Action developed and implemented for all cementing operations.	Activity Superintendent
		EPS12.4: Actual cement use and discharge will be reconciled against planned quantities throughout the campaign.	Cementing reports will include: • Cement use, including excess, for each cement job. • Materials on location and used to make cement during the day.	
EPO6 **EPO9**	CM13: Offshore Operational Procedures	EPS13.1: Existing infrastructure will be protected from impact by mooring equipment via: • Mooring analysis and plan by mooring specialist which accounts for the locations of existing infrastructure. • Anchor selection and placement to reduce potential for anchor drag. Further contingencies will be in place to minimise the potential for damage to existing infrastructure. Including: • Mooring design which includes a 12-anchor spread to provide additional redundancy for position keeping should a mooring fail. • Dynamic positioning – available in the event of mooring failure, where required for station keeping. Field entry / exit protocol – vessels will require approval from the Athena Gas Plant Person In Charge (PIC) to enter the field; asset risk management measures must be demonstrated for approval to be granted.	Mooring plan demonstrates mooring analysis and planning is to be undertaken in accordance with EPS13.1. Pre-drill inspections confirm MODU Dynamic Positioning is available if required for station keeping. Completed field entry and exit forms.	Activity Manager
		EPS13.2: Mooring procedures will ensure: • Adequate tensioning of mooring is applied and maintained. • Mooring equipment is only installed or stored within the designed radius areas of the mooring spread. • Seabed relief and sensitive seabed features are considered based on seabed surveys, and sensitive features (i.e. areas of high relief) are avoided where practicable.	MODU mooring procedures or supplementary instructions provide for each component of EPS13.2.	Activity Manager
EPO9		EPS13.3: Retrieval of mooring equipment, including transponders, from the sea floor prior to or at the completion of the activities.	Operations reports confirm retrieval of all mooring equipment and transponders	Vessel Master / OIM
EPO2		EPS13.4: Drilling Discharges Management processes minimise as far as practicable, the overall volumes of WBDF discharged to the marine environment. It does this by defining the: • Volumes of fluids required for safe execution of the activity, including contingency for well control. • Fluids storage arrangements and transfer capacities on the MODU and support vessels, and how storage capacity will be actively managed to facilitate re-use of WBDF. • Properties of the fluid required to be maintained throughout the different stages of well construction. • Fluid acceptability criteria for re-use. • The solids control equipment to enable re-use of fluids. These aspects of drilling fluids management are a direct result of the well design and technical requirements that are defined in the WOMP. Drilling and cementing procedures will define how each step of the well construction process is to be completed in accordance with relevant standards (as defined in the WOMP) before the offshore activities take place.	NOPSEMA approved WOMP. Records demonstrate that drilling fluid management EPS13.4 have been implemented.	Activity Superintendent
EPO14 **EPO16** **EPO22**		EPS13.5: Vessel operators shall adhere to the distances and vessel management practices of EPBC Regulations (Part 8) and Victorian (Marine Mammals) Regulations within respective jurisdictions, as a minimum, and shall report vessel interactions with dolphins and whales. Caution zones will be extended to 500m around all whales. Helicopters will not fly lower than 1650 ft when within 500 m horizontal distance of a cetacean except when landing or taking off and will not approach a cetacean from head on. Marine mammal sightings will be recorded and submitted to DCCEEW. Sightings will be reported within three months of the end of the activity.	Daily operations report details when whales and dolphins sighted, and the interaction management actions that were implemented, if required. Notification records reporting vessel interactions to reporting body (currently DCCEEW / DEECA at the time of writing). Helicopter flight records demonstrate restrictions adhered to. Records of whale sightings reports being made to DCCEEW within 3 months of campaign end.	Vessel Master
EPO19	CM14: MODU Material Transfer Process	EPS15.1: MODU will have a bulk fluid transfer process in place before commencing operations. The process will include: • MODU-to-vessel communication protocols. • Transfer hose integrity checks. • Transfer hose pressure testing. • Continuous visual monitoring while bunkering.	Pre-Transfer preparation checklist	OIM

EPO	Control	EPS	Measurement Criteria	Responsible Person
		• Tank volume monitoring while bunkering. • Avoidance of bulk hydrocarbon transfers at night, or otherwise artificial illumination of the of the operational areas on the MODU, vessel and water between them during the transfer. • Weather limitations for bulk transfers.		
		EPS14.2: Transfer hoses for hydrocarbons shall comprise sufficient floating devices and self-sealing weak-link couplings in the midsection of the hose string, in accordance with GOMO 0611-1401.	Records demonstrate transfer hoses meet GOMO 0611-1401 requirements.	OIM
EPO14 **EPO15** **EPO16** **EPO17**	CM15: Campaign Risk Review	EPS15.1: A Campaign Risk Review, as detailed in Figure 12-6 will be undertaken in the 6-months prior to a campaign activity commencing, to: • Model noise emissions for any additional activity scenarios not already provided for in this EP. • Integrate into modelling the latest relevant sound exposure thresholds to review previously discounted control measures against updated guidance and newly accepted EPs to ensure that risks are continually reduced to levels that are ALARP and are of an acceptable level. Focus on aspect: subsea noise, and risks to endangered whale species, specifically pygmy blue whales, and southern right whales. A risk review may also be triggered during the offshore campaign where DP nighttime triggers have been exceeded, if ≥ 3 sightings of blue whales or >3 sightings of southern right whales are recorded within the observation zone for 3 consecutive days, or if concerns are raised by a member of the project or community. Risk Reviews during the campaign will be informed by a panel including MFO's experienced in the region, Activity Manager (or delegate), Vessel master (or delegate) and Amplitude Energy HSEC Representative. Recommendations will be managed in accordance with the Amplitude Energy MOC process.	Pre-campaign Risk Review report dated 6-months prior to campaign and considers each of the points in EPS15.1. Log maintained of when risk review triggers were met, and review recommendations by the panel.	Activity Manager
EPO2 **EPO17**		EPS15.2: The Amplitude Energy Environmental Protocol describes how environmental impact and risk management, including risk assessments, is undertaken for activities including offshore campaigns. As part of pre-campaign planning a risk review (refer Figure 12-5) will be undertaken to re-assess campaign environmental impacts and risks to ensure acceptability criteria are met and that impacts and risks are reduced to ALARP. The risk review will consider aspects relevant to the campaign; where there is a risk that campaign discharges to sea may contain mercury, the risk review will consider the current best available techniques and environmental practices in order to control releases of mercury.	Pre-campaign Risk Review addresses the requirements of EPS16.2**.**	
EPO12		EPS15.3: Review analogue light modelling scenarios to ensure that the scenarios and thresholds remain appropriate for the activity.	Pre-campaign Risk Review report dated 6-months prior to campaign and confirms the analogues used for light modelling remain appropriate.	
EPO19		EPS15.4: Review the LoC modelling scenarios to ensure that the modelled scenarios and thresholds are appropriate for the activity.	Pre-campaign Risk Review report dated 6-months prior to campaign and confirms scenarios used for LoC modelling remain appropriate.	
EPO17		EPS15.5: Each future EP resulting from the **East Coast Project OPP** will undertake a review for additional or significantly revised reasonably foreseeable projects. Additional or significantly revised projects will be assessed as per CIA methodology (Section 9.0). Any cumulative impacts from new, significantly revised or currently unknown activities that results in an unacceptable level of impact to receptors, will be subject to new or revised control measures within the appropriate EP to reduce cumulative impacts to ALARP.	This EP includes an assessment addressing EPS15.5.	
EPO6 **EPO8** **EPO9**	CM16: Seabed Survey	EPS16.1: Seabed surveys (geophysical, geotechnical, visual and contaminant sampling) will be undertaken for the purposes of collecting information to manage risks to the Shelf rocky reefs and hard substrates KEF values (high relief outcrops, reefs and sponge beds), sediment quality, underwater heritage, debris and hazards on the seafloor. Seabed surveys will be undertaken prior to finalising MODU position, location of mooring equipment and finalising wells and subsea infrastructure locations. Relevant survey seabed findings (benthic environment, heritage, hazards) will be included in future EPs if available at the time of preparing EP. In the event unpredicted contaminants are detected Cooper Energy will undertake a human health and environmental risk assessment to ensure ALs and EPOs are met.	Seabed survey undertaken prior to prelay of moorings and commencement of drilling. Results of seabed survey incorporated into determining final well location, and layout of moorings to avoid sensitive features. If unpredicted contaminants are detected a human health and environmental risk assessment is completed. *Note The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location.*	
EPO10 **EPO14**		EPS17.1: Active DP thruster management:	MODU and Vessel DP ASOGs. MMO daily report shows DP thrusters did not exceed ASOG loading.	MODU Captain Vessel Master

EPO	Control	EPS	Measurement Criteria	Responsible Person
EPO15 **EPO16** **EPO22**	CM17: Offshore Victoria Whale Disturbance Risk Management Procedure	• MODU and vessel DP thrusters will not be operated with loading outside of DP system Activity Specific Operation Guideline (ASOG) (DP ASOG will require loading not to exceed 70% except as necessary to avoid an emergency).		
		EPS17.2: Marine Mammal Monitoring: • 30-minute pre-start whale observation will be required within the DP observation zone for the activity, before DP operations commence, or nighttime criteria is met for DP operations at night. To be completed by the Dedicated MMO. • Ongoing monitoring for marine mammals throughout daylight hours across the monitoring network, with at least one dedicated MMO available offshore at all times whilst DP operations are happening.	Daily reports confirm MMO present offshore during DP. MMO reports confirm 30-minute MMO pre-watch completed / nighttime criteria met prior to DP operations. MMO reports confirm monitoring during daytime.	Activity Manager MODU Captain Vessel Master
		EPS17.3: DP Observation Zones The DP Observation Zones for the Activity are determined by specialist subsea noise modelling service provider and include: • 8.3 km during MODU on DP during mooring activities. • 7.9 km during MODU drilling with AHTS on DP resupply. • 500 m during vessel on DP activities.	MMO daily reports include correct DP observation zones for MODU and vessels.	Activity Manager
		EPS17.4: Marine Mammal Observation Network The observer network for the Activity will comprise: • Dedicated MMO on support vessels, with two MMOs if daylight exceeds 12-hours (sunrise-sunset) to provide continuous observation in daylight hours. There will be at least one MMO within the DP Observation Zone at all times when DP Ops are happening. • Officers of the Watch on support vessels observing as per normal vessel shift patterns and duties; the officer of the watch will provide coverage for the dedicated MMO during normal work breaks. If there is only one dedicated MMO offshore and that MMO is unable to complete their duties, then a second MMO will be mobilised to the DP Observation Zone before DP operations commence. • Officers of the Watch on MODU observing as per normal MODU shift patterns and duties. • Helicopter crew (personnel transfers from shore to the MODU) observing opportunistically during over-sea transit. • Observations from other operators working in the region where the information is shared. • Observations from publicly available Citizen Science.	Daily reports and MMO reports confirm the make-up of the observer network meet EPS17.4. During the activity, weekly summary of publicly available Citizen Science and other Operators (if available) working in the region, shared with MMOs.	Activity Manager
		EPS17.5: Observation uncertainty: Species confirmation criteria will be developed for blue whale and southern right whale ID, by an experienced MMO (5+ years' experience) and will be provided to the Activity Dedicated MMOs. For crew observers, dedicated MMOs will advise on species where there is uncertainty.	MMO support materials include blue whale and southern right whale confirmation criteria.	Activity Manager
		EPS78.6: DP Suspension Actions: • Suspension of DP operations (if safe to do so) where a blue or southern right whale is observed within the relevant activity DP Observation Zone. • Suspension of DP operations (if safe to do so) before any whale is observed within the Activity DP TTS zone continuously for 24 hours. *Note: DP TTS Zones are smaller than the DP Observation Zones and are defined in the noise modelling report.* • Adopt favourable heading to reduce thruster load (and associated noise) and slowly increase separation from whale if safe to do so. • Apply 60-minute pre-start observation prior to recommencing activities, from the time the BW or SRW was last observed in the activity DP observation zone. • Night-time criteria: DP operations are to be avoided (if safe to do) so when: 3 or more sightings of blue or southern right whales occurred in the DP Observation Zone within 3-hours prior to sunset, or a blue or southern right whales are observed within the 30 minutes prior to sunset inside the observation zone and have not been observed leaving the zone. ***Whether it is safe to take action is determined by the person in command of the vessel (i.e. vessel master or their delegate).*	MMO reports detail: • If / when DP was suspended (due to whale presence). • If a favourable heading was adopted. • If a prestart observation was undertaken. • If night-time criteria were followed. Instructions from the vessel master (or delegate) in relation to EPS18.6.	MODU Captain Vessel Master

EPO	Control	EPS	Measurement Criteria	Responsible Person
		EPS17.7: Daily Reporting: A daily MMO report will be issued, consolidating all sightings and actions from across the monitoring network.	Daily MMO reports include sightings and actions from across the monitoring network.	Activity Manager
		EPS17.8: MMO Capacity and Competency: • Dedicated Lead MMO minimum experience / competency is multiple offshore campaigns as a marine mammal observer with experience observing blue whale and southern right whale within BIAs (or international equivalent). • At times of year when daylight hours exceed 12-hours, there will be a second dedicated MMO (minimum experience / competency is: at least one offshore campaign as a marine mammal observer, and familiar with the ID features for blue whales and southern right whales. • Dedicated MMOs shall have demonstrated prior experience in the ID of large baleen whales, distance estimation and systems of recording and reporting, and understand the Australian regulatory requirements. • MMOs shall be hired from service providers with expertise in marine mammal observing. • MMO experience and competency will be reviewed and confirmed by the MMO service provider and checked by Amplitude Energy prior to their mobilisation to monitor a DP Observation Zone. • Vessel Officers of the Watch: the dedicated MMO(s) will be supported by trained bridge crew. Bridge crews will be inducted into Activity requirements and whale ID and will have a high base level of observation experience and competency noting watchkeeping duties are a core competency, and marine mammal observation for collision avoidance and to minimise behavioural disturbance to endangered blue and southern right whales, is applicable to all offshore marine users. • Helicopter Crew: Helicopter crew will complete MMO Program Induction. • MMO Program Inductions - Dedicated MMOs, Vessel and MODU Officers of the Watch, and helicopter crews shall receive an induction including: – overview of the Activity – description of species that are the focus for the program and why – marine mammal monitoring and action requirements – ID criteria for endangered whales – reporting requirements.	MMO program induction pack includes the information outlined in EPS17.8. MMO program induction records for Helicopter Crew and Vessel and MODU Officers of the Watch. Pre-mobilisation checks of competency for DMMO's confirm they meet EPS17.8. Daily MMO report confirms at least minimum numbers of MMO's on vessels in line with EPS17.8.	Activity Manager
EPO15 **EPO16**		EPS17.9: The Whale Disturbance Risk Management Procedure will be implemented, assisting the implementation of CM17. Applicable Provisions within the procedure include: • Establishment of a communications protocol between observers, vessel master and project team. • Dedicated MMO for the hours of daylight (defined as sunset to sunrise). A 2nd MMO where necessary if daylight extends beyond 12-hr period. • Dedicated MMOs shall have demonstrated prior experience in the ID of large baleen whales, distance estimation and systems of recording and reporting. • Inducted crew observers to support dedicated MMO during rest breaks. • Reporting of any injured marine mammal to relevant response and regulatory agencies.	Activity specific behavioural disturbance distances from noise modelling report included in campaign specific procedure. Daily report confirms crew observers. MMO reports confirm presence of MMO/s. MMO training records demonstrate prior experience. Notification records are available for injured marine mammals.	Chief Operating Officer
EPO16	CM18: Other Detection Technologies	EPS18.1: Amplitude Energy will continue to seek other technologies for whale detection through discussions with specialist service providers, other titleholders, and/or participation in the AEP Marine Noise Working Group. Technologies that are identified will be assessed with the campaign risk review panel. Evaluation criterion will include technology readiness, the level of risk reduction (specific to the risk event) afforded by the technology, Activity integration feasibility and costs. Where detection technologies are used, they will be in addition to the MMO program and technology effectiveness will be shared with other operators in the region.	Records of engagement with other Titleholders, service providers and/or AEP Marine Noise working group. Completed risk review evaluates other detection technology.	Manager Environment and Sustainability
EPO7 **EPO20**	CM19: Waste Management Practices	EPS19.1: Vessels and MODU implement a garbage management plan. • The waste hierarchy is applied to project wastes. • Waste with potential to be windblown is contained and restrained. • Waste lost overboard is recorded and recovered if possible.	Garbage management plan includes garbage categories, storage and containment. Waste transfer records detail all waste transfers. Daily reports include incidents of waste overboard and details of recovery / attempts.	Vessel Master / OIM

EPO	Control	EPS	Measurement Criteria	Responsible Person
		• Waste transfers are recorded.		
EPO21	CM20: Amplitude Energy IMS Risk Management Protocol	EPS20.1: - Vessels and MODU will comply with the Australian biofouling management requirements and Australian ballast water management requirements. Vessels and MODU biofouling and ballast management histories are used to complete an IMS Risk assessment prior to the vessel arriving within the operational area. Subsequent risk management actions are completed in accordance with the Vessel Biofouling and Ballast Water Management Plans for Low-risk Vessels, or otherwise in accordance with recommendations of a qualified IMS inspector.	Completed IMS Risk Assessments for vessels and MODU, and equipment that may be deployed into the marine environment showing 'low risk'. Vessel Biosecurity Import Records.	Chief Operating Officer
EPO7 **EPO19**	CM21: Activity Fire Fighting Foam Screening and Quarantine Standard	EPS21.1: From 01 July 2025, firefighting foams for well construction activities (i.e. response standby Aqueous Film Forming Foam (AFFF) for the well test package) will not contain PFOS, PFOA, PFHxS and related substances in compliance with IChEMS (Schedule 7). Firefighting foam SDS will be screened for these substances; any firefighting foams that do not comply with this requirement as of 01 July 2025 will not be used or stored offshore, or, if any legacy products are found offshore, they will be quarantined.	Review records and SDS for activity firefighting foams. Evidence of activity firefighting foams being quarantined where they do not meet the requirements.	Activity Manager
EPO19	CM22: NOPSEMA Accepted WOMP	EPS22.1: A NOPSEMA-accepted WOMP. The WOMP includes, as applicable to the activity: • Amplitude Energy well management standards detailing how well integrity will be managed over the well life-cycle. • A description of well barriers. • Performance and testing criteria.	Records confirm a NOPSEMA-accepted WOMP is in place. Implementation records confirm timely testing aligned with WOMP.	Activity Manager
EPO19	CM23: NOPSEMA Accepted Safety Cases	EPS23.1: Activities will be managed in accordance with the accepted safety case revisions.	Accepted Safety Cases in place. Implementation records confirm safety case control measures have been implemented.	Activity Manager
EPO19	CM24: Source Control Emergency Response Plan	EPS24.1: Source control capability is maintained in accordance with the SCERP. Source control response activities will be implemented in accordance with the SCERP.	Pre-campaign readiness records confirm source control capability is maintained as per SCERP requirements. Records confirm that emergency response activities have been implemented in accordance with the SCERP.	Activity Manager
EPO19	CM25: Oil Pollution Emergency Plan (OPEP)	EPS25.1: Emergency spill response capability is maintained in accordance with the OPEP. Emergency response activities will be implemented in accordance with the OPEP.	Pre-campaign readiness records confirm spill response capability is maintained as per the OPEP requirements. Records confirm that emergency response activities have been implemented in accordance with the OPEP.	Chief Corporate Services Officer
EPO19	CM26: Operational and Scientific Monitoring Plan (OSMP)	EPS26.1: Operational and scientific monitoring will be implemented in accordance with the OSMP.	OSMP is in place. Records confirm that operational and scientific monitoring have been implemented in accordance with the OSMP.	Chief Corporate Services Officer
EPO9	CM27: Amplitude Energy Decommissioning Protocol	EPS27.1: Amplitude Energy will meet the requirements of Section 572 ('Maintenance and removal of property etc. by titleholder') of the OPGGS Act: • If Annie-2 development well does not access a commercially viable resource following well testing, it will be abandoned at the time of well evaluation and within the well activity duration of this EP • The Annie-2 development well will be permanently abandoned within 3 years in the event the well is not tied into the existing CHN pipeline, or as accepted in the governing WOMP where integrity can be demonstrated as per regular inspection and / or monitoring activities. • Annie-2 will be permanently abandoned within 3 years of permanently ceasing production or as accepted in the governing WOMP where integrity can be demonstrated as per regular inspection and/ or monitoring activities. • All well equipment on the seabed will be recovered.	Amplitude Energy Decommissioning Protocol. Survey records confirming no equipment on seabed.	Chief Operating Officer
EPO9 **EPO20**	CM28: Retrieval of dropped objects were practicable	EPS28.1: If practicable to do so, objects accidentally dropped to the seabed will be retrieved.	Dropped object recorded as an incident, and location of dropped object recorded if practicable. Daily reports demonstrate retrieval of dropped object.	Vessel Master OIM
EPO23	CM29: Engagement During Emergency Response	EPS29.1: Engagement with relevant First Nations Representatives in the event of a loss of containment of hydrocarbons which may extend to coastlines to obtain advice on the management of cultural sensitivities which may be in the spill trajectory.	Engagement Records show engagement with First Nations representatives.	Chief Corporate Services Officer

EPO	Control	EPS	Measurement Criteria	Responsible Person
	CM30: Underwater Cultural Heritage Disturbance Risk Management Measures	EPS30.1: Amplitude Energy will ensure the activity is compliant with the *Underwater Cultural Heritage Act 2018* (Underwater Heritage Act) by: • Seabed survey data will be reviewed prior to well construction activities and used to inform equipment laydown locations to avoid impacts to underwater cultural heritage. • Review of relevant seabed survey data will be conducted by a suitably qualified and experienced cultural heritage team. The team will include a marine archaeologist, have familiarity with First Nations cultural landscapes and experience in identifying landscape features from geophysical data. • If cultural heritage is identified, it will be mapped, along with suitable exclusion zone and its location integrated into Activity inductions and procedures to ensure it is avoided during Activity. • UCH Review Report will be provided to relevant RAP. • Implementing a process for reporting and managing unexpected finds during the activity, including reporting of any new suspected underwater cultural heritage to DCCEEW (or delegate) within 21 days of discovery.	Pre-campaign risk review communications confirm equipment laydown areas to avoid any UCH identified within Geophysical survey reports. UCH Review Report interprets geophysical data and maps findings with exclusion zones. Activity inductions and procedures include identified UCH and controls. Email / meeting records show distribution of UCH review report. Notification and Reporting Records demonstrate new UCH reported to DCCEEW (or delegate) within 21 days of discovery.	Activity Manager

**Contingent activity

11.0 Consultation

11.1 Summary

Amplitude Energy is committed to engaging with relevant persons (as that term is defined in regulation 25 of the OPGGS(E)R) in a transparent, genuine and meaningful way, through our consultation process. We recognise that our consultation process must be robust and systematic, so that it is consistently and demonstrably compliant with the applicable regulatory requirements. Amplitude Energy consulted with relevant persons in the course of preparing this EP in accordance with our consultation process, and applicable regulations and guidelines. Amplitude Energy's consultation process sought to acknowledge that any consultation process must also have a degree of adaptability, as it is a "real world" activity in a dynamic environment, that will vary depending on the nature of the authority, persons or organisations to be consulted. This is because the purpose of consultation is to inform Amplitude Energy's understanding of the environment, including the social, cultural and heritage values of features that may be impacted by our EP activities.

This section sets out how Amplitude Energy has carried out consultation for the ECSP: Annie-2 Development Well EP, in accordance with the OPGGS(E)R, and having regard to the published guidance materials from NOPSEMA. Amplitude Energy commenced consultation from as early as December 2024, with select stakeholders, including those that had communicated a specific need for early engagement on such projects. The broader consultation process, with the majority of stakeholders, commenced mid-May 2025 and ran until prior to the submission date of this EP. The design of our consultation process ensured that relevant persons were identified and provided sufficient information and a reasonable time period to make an informed assessment of the potential impacts of our EP activities. Given the broad range and geographical spread of relevant persons, a variety of engagement methods were used to ensure they were provided with sufficient information, and opportunities to obtain further information. These engagement methods included phone calls, emails, SMS messages, social media advertisements, newspaper advertisements, radio advertisements, a dedicated consultation website, audio-video presentations, community information sessions (online and in-person), tailored meetings and tailored information sheets.

Overall, there were limited enquiries, claims or objections raised in the consultation process by relevant persons. For the limited concerns raised, Amplitude Energy carefully assessed the merits of the claims or objections on a case-by-case basis, and (where appropriate) adopted new or changed control measures to reduce the relevant risks or impacts to an acceptable level and ALARP, and consistent with the principles of ecologically sustainable development. This is described further in sections 6.0 and 1.0.

Where Amplitude Energy has received input from Relevant Persons in consultations undertaken in the course of preparing other environment plans, it has considered and applied that input in the course of preparing this EP and included where appropriate.

Consultation in the course of preparing this EP has been completed in accordance with the regulatory and legal requirements for such consultation. This EP demonstrates that Amplitude Energy's consultation process has met or exceeded the requirements of the OPGGS(E)R. Should Amplitude Energy receive any further concerns or feedback regarding this EP after the EP has been accepted by NOPSEMA, these will be managed as described in section 12.12.

11.2 Regulatory Compliance – Summary of Requirements

Regulatory compliance has been achieved, and this EP demonstrates that:

- Per **regulation 25(1) of the OPGGS(E)R**, identification of, and consultation with, relevant persons has occurred (see Section 11.3).
- Per **regulation 25(2) of the OPGGS(E)R**, sufficient information has been provided to relevant persons to enable them to make an informed assessment of the possible consequences of the activity on their functions, interests or activities (see Section 11.3.2).
- Per **regulation 25(3) of the OPGGS(E)R**, a reasonable period for consultation has been provided to each relevant person to consider the information, make their assessment and provide feedback if they wish to do so (see Section 11.3.3).
- Per **regulation 25(4) of the OPGGS(E)R**, relevant persons have been advised that they may request that particular information provided during consultation not be published, and ensuring that such information is not published (see Section 11.3.4).
- Based on the information and feedback acquired through the consultation process, appropriate measures have been adopted to reduce the impacts and risks associated with the activity (See Appendix 8 -

This EP sets out the following information pursuant to regulation 24(b) OPGGS(E)R (see Appendix 8 - and the Sensitive Information file):

- A summary of each response made by a relevant person.
- Our assessment of the merits of any objection or claim about the adverse impacts of any activity to which the EP relates.
- Our response, or proposed response, to each objection or claim.
- Any measures adopted as a result of consultation.
- Copies of the full text of any responses given by a relevant person.

Amplitude Energy continuously reviews and improves its policies and procedures, to reflect changes in law, regulator guidelines, judicial decisions and industry standards. Additionally, following the appeal decision of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193, Amplitude Energy has conducted an extensive review of its methodology for identifying and consulting with relevant persons, for the purposes of preparing this EP.

The following NOPSEMA guidelines were also considered in planning and delivering our consultation process:

- GL2086 – Consultation in the course of preparing an environment plan – May 2024.
- GN1344 – Environment plan content requirements – July 2025.
- GN1488 – Oil pollution risk management- July 2021.
- GN1785 – Petroleum activities and Australian Marine Parks – January 2024.
- GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2024.

Table 11-1: OPGGS(E) Regulation Consultation Requirements

OPGGS(E)R Regulation	NOPSEMA Guideline	How requirements were met
34 Criteria for acceptance of environment plan. ***Regulation 34 provides that the criteria for acceptance of an environment plan are that the plan demonstrates that:*** • ***(g)(i) the titleholder has carried out the consultations required by section 25; and*** • ***(g)(ii) the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate.***	Regulation 25 establishes a duty on titleholders to carry out consultation in the course of preparing an environment plan. In order to accept an environment plan under regulation 33, NOPSEMA must be reasonably satisfied (as per regulation 34) that the environment plan demonstrates the duty (to carry out consultation with relevant persons required by regulation 25) has been discharged and that the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate. Consultation should be a genuine and meaningful two-way dialogue in which relevant persons are given sufficient information and time to allow them to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. The consultation process used for different activities may vary depending on a range of factors, certain key principles should be evident in the environment plan.	This EP demonstrates that these requirements were met: The below summary rows setting out how the consultations required by regulation 25 were carried out; and Adopting measures as a result of consultation: Report on Consultation in Appendix 8.
25(1) Consultation with relevant authorities, persons and organisations etc. ***In the course of preparing an environment plan (including a revised environment plan referred to in Division 5) a titleholder must consult each of the following (a relevant person):***	Titleholders are required to identify and consult with each authority, person or organisation who falls within the categories of relevant persons set out in regulation 25. Titleholders must clearly identify in their environment plan who is a relevant person and the rationale the titleholder has used to determine who they consider falls within that definition. Environment plans should set out the processes that have been applied to identifying and determining who are relevant persons, as well as the process undertaken for consultation. Authorities, persons and organisations are to be identified on a case-by-case basis. Factors such as the nature of the activity, the environment in which the activity is being undertaken and the possible impacts and risks of the activity should be taken into account when determining whether the activity may be relevant to authorities, or determining who has functions, interests or activities that may be affected.	This EP sets out how Amplitude Energy satisfied the requirements of this regulation in section 11.3.1. This section identifies each relevant person identified for the purpose of this EP and the methodology adopted to identify such relevant persons.

OPGGS(E)R Regulation	NOPSEMA Guideline	How requirements were met
• ***Each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the environment plan may be relevant.*** • ***If the plan relates to activities in the offshore area of a State—the Department of the responsible State Minister.*** • ***If the plan relates to activities in the Principal Northern Territory offshore area—the Department of the responsible Northern Territory Minister.*** • ***A person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the environment plan.*** • ***Any other person or organisation that the***	Regulation 25, like most statutory consultation provisions, imposes an obligation that must be capable of practicable and reasonable discharge by the titleholder. It also involves 'some decisional choice' that the titleholder must make in identifying relevant persons and in how the consultation is undertaken. Processes for the identification of relevant persons must provide for sufficiently broad capture of ascertainable persons and organisations who may have their functions, interests or activities affected or that may be affected by the activity. Publication in appropriate media forms may be a reasonable tool to assist in the identification of relevant persons and inform the delivery of more targeted notices to potentially relevant persons. It is recognised that in any community consultation there will inevitably be persons within a group who could not participate for various reasons, however the absence of their participation would not invalidate the process provided reasonable efforts were made to identify the relevant persons and to consult with them. The process should include reference to multiple sources of information, such as publicly available materials, review of databases and registers, published guidance, previous history, as well as advice from authorities and other relevant persons. In some cases, relevant persons have developed guidance detailing their functions, interests or activities and how and when they wish to be consulted on activities. Titleholders should take this guidance into account in developing consultation processes with relevant persons. Titleholders may also consider how they can create awareness of their activities to encourage potentially relevant persons to make themselves known to the titleholder.	

OPGGS(E)R Regulation	NOPSEMA Guideline	How requirements were met
titleholder considers relevant.		
25(2) Consultation with relevant authorities, persons and organisations etc. ***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.***	Information provided must be sufficient to allow an informed assessment of the possible consequences of the activity on the functions, interests or activities of the relevant person. Again, the titleholder has a "decisional choice" to make in how information will be given to allow the "relevant person" to make the assessment contemplated by regulation 25(2). Titleholders should consider the functions, interests or activities of relevant persons and the impacts and risks that affect them when determining information requirements. The environment plan must demonstrate that the duty (to carry out consultation with relevant persons) has been discharged and that the consultation provided sufficient information about the environment and impacts on the environment. The level of information necessary is likely to vary for different relevant persons and may depend on the degree to which a relevant person is affected. Different consultation processes may be required for relevant persons and organisations depending on information requirements. What constitutes sufficient information as part of a consultation processes may differ depending on the relevant person(s) and the environment plan should demonstrate that the process was suited to the type of relevant person. Generic, targeted electronic mailouts or links to a webpage may not be sufficient. Information should be in a form that is readily accessible and appropriate for the relevant person being consulted. Materials provided may include written forms, pictorial or other graphics, verbal briefings or presentations, and the use of other technologies. Information may well need to be provided in an iterative manner, as finer detail and precision is developed through the consultation process. Titleholders are encouraged to discuss expectations around the type and level of detail of information required with relevant persons early when commencing consultation.	Section 11.3.2 sets out the methodology adopted to preparing and presenting sufficient information to relevant persons, along with the different types of information prepared for relevant persons.
25(3) Consultation with relevant authorities, persons and organisations etc ***The titleholder must allow a relevant person a***	Titleholders must provide a "reasonable period" for the relevant person to make an informed assessment of the possible consequences of the proposed activity on their functions, interests or activities and so they are able to respond with any concerns. The nature, scale and complexity of an activity, as well as the extent and severity of potential impacts and risks on a relevant person's functions, interests or activities may inform what makes a reasonable period for consultation. Relevant persons may have also provided the titleholder with their views of what constitutes reasonable timeframes, their availability and or accessibility issues that should be taken into account. Therefore, what is a reasonable period for consultation should be considered on a case-by-case basis.	Section 11.3.3 sets out Amplitude Energy's approach to ensuring that relevant persons were provided with reasonable periods for consultation.

OPGGS(E)R Regulation	NOPSEMA Guideline	How requirements were met
reasonable period for the consultation.		
25(4) Consultation with relevant authorities, persons and organisations etc. ***The titleholder must tell each relevant person the titleholder consults that:*** ***(a) the relevant person may request that particular information the relevant person provides in the consultation not be published; and*** ***(b) information subject to such a request is not to be published under this Part.***	-	See Section 11.3 Appendix 8 - and the Sensitive Information file.
24 Other information in environment plan. ***The environment plan must contain the following:*** • ***A statement of the titleholder's corporate environmental policy.*** • ***A report on all consultations under section 25 of any relevant person by the titleholder, that contains:***	The consultation process should be documented within the environment plan through the titleholder report on consultation and the sensitive information report. Under regulation 24(b) of the Environment Regulations, the environment plan must contain a report on the consultation which provides: i. a summary of each response made by a relevant person ii. an assessment of the merits of any objection or claim about adverse impact of each activity to which the environment plan relates iii. a statement of the titleholder's response, or proposed response, if any, to each objection or claim iv. a copy of the full text of any response by a relevant person. NOPSEMA expects the environment plan to also provide descriptions of the consultation processes, and the rationale used to determine who and how to consult with relevant persons, including the approach to provision of sufficient information and how a reasonable period for the consultation was	See Appendix 8 - for the Report on Consultation.

OPGGS(E)R Regulation	NOPSEMA Guideline	How requirements were met
– ***A summary of each response made by a relevant person.*** – ***An assessment of the merits of any objection or claim about the adverse impact of each activity to which the environment plan relates.*** – ***A statement of the titleholder's response, or proposed response, if any, to each objection or claim.*** – ***A copy of the full text of any response by a relevant person.*** – ***Details of all reportable incidents in relation to the proposed activity.***	determined. This will assist to provide a basis for NOPSEMA to form a reasonable satisfaction view that the titleholder has carried out the consultations required by regulation 25. The consultation process should also assist the titleholder to meet its obligation under section 280 or 460 of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 which requires that it must carry out the petroleum or greenhouse gas activity respectively in a manner that does not interfere with navigation, fishing, conservation of resources of the sea and seabed, other offshore electricity infrastructure and petroleum activities, and the enjoyment of native title rights and interests (within the meaning of the Native Title Act 1993) to a greater extent than is necessary for the reasonable exercise of the titleholder's rights and obligations. Titleholders should ensure that a summary containing the main matters raised in each response made by a relevant person is included in the consultation report. Assist the titleholder to meet its obligation under section 280 or 460 of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 which requires that it must carry out the petroleum or greenhouse gas activity respectively in a manner that does not interfere with navigation, fishing, conservation of resources of the sea and seabed, other offshore electricity infrastructure and petroleum activities, and the enjoyment of native title rights and interests (within the meaning of the Native Title Act 1993) to a greater extent than is necessary for the reasonable exercise of the titleholder's rights and obligations. Titleholders should ensure that a summary containing the main matters raised in each response made by a relevant person is included in the consultation report. The report on consultation should not include the full text or extracts of the full text of any response by a relevant person. Under regulation 26(8), this information must be contained in the sensitive information part of the environment plan and not anywhere else in the plan. The report on consultation should also include clear and precise identification of claims and objections presented, an assessment of the merit of each objection or claim with sufficient rationale provided to support that assessment, and a demonstration of the suitability of any measures adopted as a result of the consultation. Full text (source) records must be provided to verify the accuracy of the summary of the consultation. NOPSEMA interprets the term "full text" to mean an unedited version of the correspondence received without redacted or modified text. Titleholders will need to document in written form all communications undertaken between themselves and relevant persons. This may require documenting the minutes of meetings, undertaking written communications wherever practicable and requesting that responses from relevant persons be provided in writing where practical.	
22(15) and (16) Implementation strategy for environment plan	Demonstrating in an environment plan that ongoing consultation is a part of a titleholder's implementation strategy as required by regulation 22(15), is separate to demonstrating that requirements for relevant persons consultation outlined in this guideline have been met.	See section 12.12 of the Implementation section.

OPGGS(E)R Regulation	NOPSEMA Guideline	How requirements were met
(15) The implementation strategy must provide for appropriate consultation with: ***(a) relevant authorities of the Commonwealth, a State or a Territory; and*** ***(b) other relevant interested persons or organisations.*** ***(16) The implementation strategy must comply with the Act, this instrument, any other regulations made under the Act, and any other environmental legislation applying to the activity.***		

11.3 Consultation with Relevant Authorities, Persons and Organisations - Regulation 25 OPGGS(E)R

11.3.1 Identifying Relevant Persons – 25(1)

In properly discharging our consultation obligations for identifying relevant persons under regulation 25(1)(a), (b), (c), (d) and (e) of the OPGGS(E)R, we have adopted a methodology that is reasonable, pragmatic and factors in the practical aspects of the consultation process, while remaining compliant with applicable law. This methodology is consistent with NOPSEMA's Guidelines and demonstrates Amplitude Energy's cognisance of:

- the planned activities
- the geographical extent to which the environment may be impacted by unplanned activities, risks and impacts.

The below graphic sets out an overview of the process undertaken by Amplitude Energy to identify relevant persons.

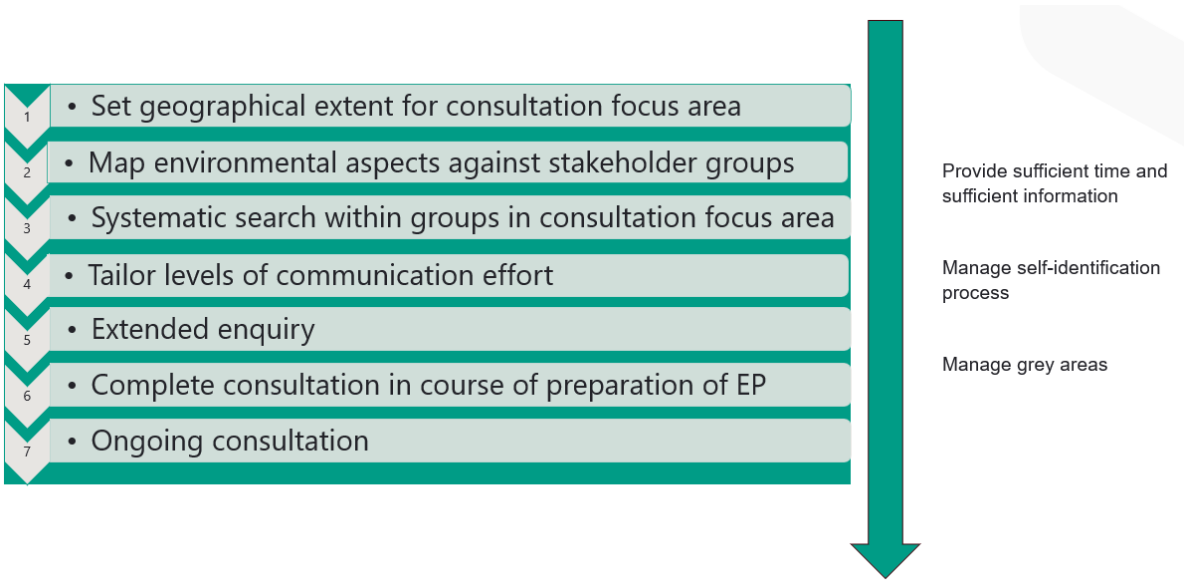


Figure 11-1: Process Steps

11.3.1.1 Geographical Extent for Consultation Focus Area

The purpose of consultation is to gain input from individuals, groups and authorities who are potentially affected by the activities under the EP, so that these risks and impacts can be assessed and reduced to an acceptable level and ALARP.

The first phase of our methodology for identifying relevant persons was to overlay the extent of potential impacts from our planned and unplanned activities with persons or organisations whose interests, activities or functions could be impacted.

Our methodology and rationale for this approach is set out further below.

Planned activities

We considered the largest spatial area where a person's interests, activities or functions could be impacted by the planned activities and determined this to be the flaring EMBA. We refer to this as the Activities EMBA.

The persons that may be affected by planned activities do not necessarily reside proximate to the activities, but have functions, interests or activities that potentially overlap with the Activities EMBA.

For example, a person with fishing quota overlapping the Activities EMBA, or a conservation organisation with an interest in protecting marine mammals transiting the area, may be based outside of the Activities EMBA but nonetheless be a relevant person for the purpose of Amplitude Energy's consultation.

Unplanned activities

Of the potential unplanned activities, the one that carries the highest level of public interest and potential consequences is a hydrocarbon spill.

We used quantitative spill modelling for a loss of containment whilst drilling, to determine the total geographic area that could potentially be impacted by a hydrocarbon spill. We use the EMBA (identified in Section 4.2)to guide where to focus consultation efforts and to delineate a Consultation Focus Area (CFA)[12]. We do this because whilst the EMBA (and therefore CFA) is large, and impacts are unlikely, it provides conservatism in how broadly we seek relevant persons.

Our impact and risk assessment at Section 6.8 notes that in the unlikely event of a spill there is some potential for social affects beyond the CFA. However, as described in section 6.8.5.4, exposure concentrations are not uniform to the outer extent of these thresholds. Rather, exposure levels are lower outside the EMBA, and therefore the potential consequences are generally of lower severity and scale, and the risk of occurrence is more remote. Having regard to this, we consider that the ecological impacts boundary depicted by the EMBA represents a natural and reasonable point at which to transition from direct identification of relevant persons, to the extended enquiry process described in section 11.3.1.5.

Through our extended enquiry process, sufficiently broad capture and reasonable opportunity was provided for self-identification by relevant persons outside the CFA. We undertook broad coverage advertising of consultation on this EP in national, state-wide and regional press, and we also made enquiries with the ~290 relevant persons that we consulted with, as to whether there were any other potentially interested persons they thought we should contact. Further advertising via radio, social and regional press media was run to advertise our community sessions and webinars, and subsequently to notify the public of the pending closing of consultation, all of which created additional opportunities for self-identification.

Overall, by using in combination

- a CFA that identified and concentrated efforts on persons who might have functions, interests or activities within the EMBA

[12] *Sometimes stochastic oil spill modelling will generate small sections of an EMBA that outlie the contiguous EMBA. These outliers are reviewed and treated on a case-by-case basis as to whether we extend the CFA to encompass them. We consider the modelled exposure concentrations at specific locations, the likelihood of exposure, brevity of exposure, and the types of persons and organisations in those areas that could be impacted, as well as previous consultation in those areas. In this instance our existing environment and impact and risk assessments have been informed by two recently accepted EPs in the Gippsland region and one in the Otway region. These EPs also address the potential impacts from a L2/3 hydrocarbon spill. In all cases, any outliers to the CFA are well covered by expansive extended enquiry, as well as direct identification of potentially affected PBCs/RAPs in eastern Victoria.*

- an extensive extended enquiry process with a sufficiently broad capture to seek out and allow for self-identification of persons outside the CFA.

Amplitude Energy has been able to discharge its consultation requirements in a practical and reasonable manner, that supports the objects of the OPGGS(E)R.

For this EP, in addition to completing direct enquiry within and adjacent to the CFA, we undertook additional direct enquiry for the following locations that are proximal to the CFA:

- The whole LGA coastal area if any part of the LGA is adjacent to the EMBA (full coastal extent of Glenelg, Moyne, Warrnambool, Corangamite and Colac-Otway LGA areas).
- The offshore area adjacent to those LGA areas (to capture relevant fisheries, both state and Commonwealth, to determine relevant persons from the fishing sector).

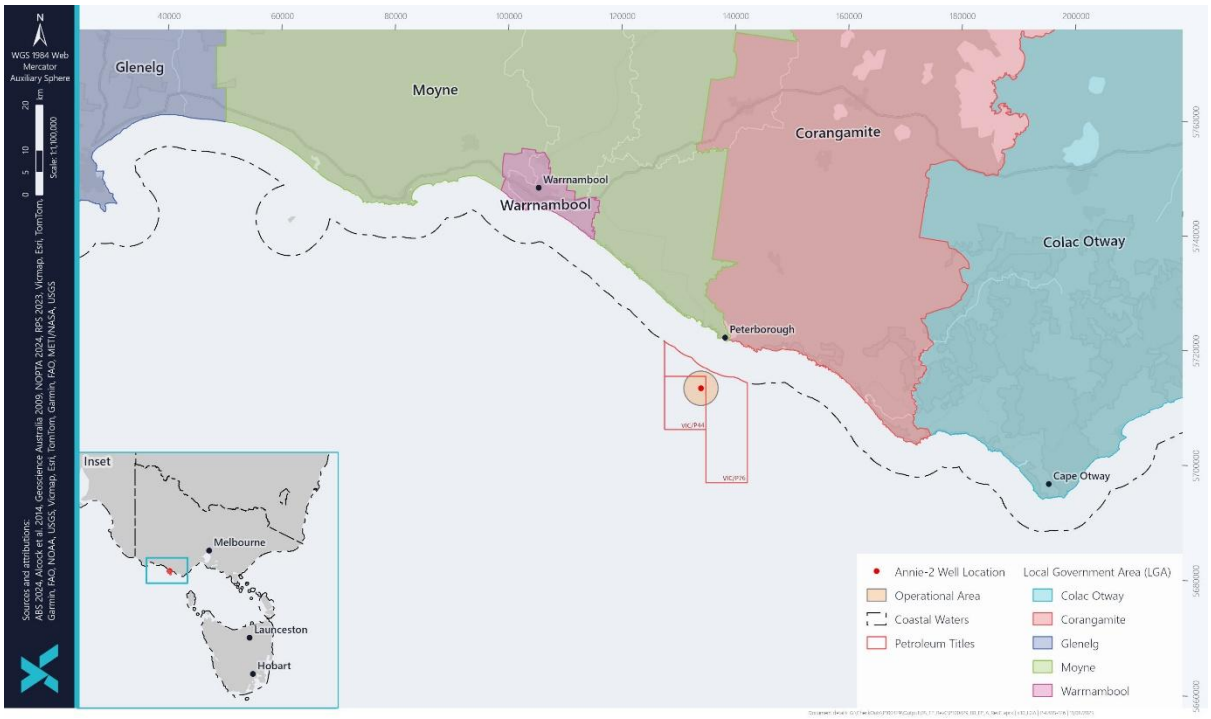


Figure 11-2: Consultation Focus Area LGAs

11.3.1.2 Defining Relevant Person Categories

The second phase of our methodology for identifying relevant persons was to assess the categories of relevant persons who might have their functions, interests or activities affected by our activities under the EP. By mapping these categories of relevant persons, we were then able to perform more detailed searches and research for identification purposes.

Consistent with the objects of the OPGGS(E)R, a broad approach was taken to the 'relevant persons' concept and this included government departments and agencies, private sector organisations and individuals. The "interests" of relevant persons were not confined to legal interests in land or property, but also included environmental values and sensitives in connection with the sea and marine resources that may be affected.

To support identification of groups of relevant persons that may be affected, they were mapped against environmental aspects to determine how their functions, interests or activities may be affected by our activities. This mapping is shown in Table *11-2*.

Commonwealth and State government departments and agencies are not included in this mapping table. Rather, in their case we considered whether the activities may be relevant to their roles and responsibilities, and reviewed:

- GL1887 - Consultation with Commonwealth agencies with responsibilities in the marine area.
- GN1785 - Petroleum activities and Australian Marine Parks.
- Amplitude Energy's prior consultation in the Otway Basin.
- Desktop analysis to identify any agency or department changes.

Appendix 8 - of the EP provides lists of the relevant persons that were identified, and our rationale for their inclusion in the list.

Table 11-2: Aspects, and Groups of Relevant Persons

Group of Relevant Person	Indicative level of effort	Physical presence		Planned emissions				Planned discharges			Unplanned interaction				Accidental release
		Displacement	Seabed disturbance	Light	Underwater sound	Atmospheric	Greenhouse gas	Subsea operational	Surface operational	Routine from vessel	Marine fauna	IMS introduction	Dropped object	Waste	Hydrocarbons
Business, industry and research															
Marine based businesses	2	X										X			X
Energy operators	2	X			X						X	X			X
Other infrastructure	2	X	X										X		X
Research	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tourism	2	X									X				X
First Nations															
Eastern Maar	1		X	X	X		x	X			X				X
Gunditjmara	1		X	X	X		x	X			X				X
Wadawurrung (have previously advised they only wish to be informed)	2		X	X	X		x	X			X				X
Bunurong	1						x				X				X
Gunaikurnai	1						x				X				X
Other First Nations peoples (if identified)	1		X	X	X		x	X			X				X
Fisheries licence holders or representatives															
Fishers – major peak bodies – SIV and SETFIA	1	X	X		X			X			X	X			X
Fishers- other	2														
Recreational fishers	2	X	X		X			X			X	X			X
Aquaculture operators	2		X		X			X			X	X			X
Interest groups															
Conservation & environment	2		X	X	X	X	X	X	X	X	X	X	X	X	X
Marine recreation	2	X									X				X
Coastal community interest groups	2			X		X	X				X				X
Government															
Local government authorities (also manage ports in CFA)	2			X		X									X

11.3.1.3 Search within Relevant Persons Categories

A systematic search was undertaken across each group for relevant persons within the CFA, using the following tools:

- Amplitude Energy's established and ongoing operational presence in the area for 8 years, and previous consultation undertaken for this and other activities in the region.
- Web searches
- Review of other operators' EPs in same general area for comparable projects
- Asking known relevant persons
- Asking other stakeholders who may not be relevant persons themselves
- Reviewing NOPSEMA guideline – consultation with Commonwealth agencies with responsibilities in the marine area.

This search effort placed maximum weight on known functions, interests or activities that fall within the Activities EMBA (i.e. state/national conservation groups, fishing licence holders, peak bodies), as these may be affected by impacts and risks known to be present. The secondary, but still substantial, search effort targeted identified groups in the CFA.

We have operated in this area for many years, so most of the relevant persons with functions, interests or activities within the Activities EMBA were already known to us, as were many with functions, interests or activities more generally within the CFA.

As new groups of relevant persons were identified they were added to Table 11-2 and were subject to the systematic search for members of that group.

11.3.1.4 Tailoring Communications to Relevant Person Categories

Genuine and reasonable efforts were made to elicit a response from relevant persons identified in Appendix 8. This level of effort varied from multiple emails to multiple attempts via multiple channels (if other channels for contacting a relevant person were ascertainable). This was based on a qualitative, case-by-case assessment, that sought to achieve a balance between overwhelming relevant persons and providing reasonable prompts and opportunities to those wishing to be consulted. We considered factors such as:

- The relevant person's administrative maturity (with shire councils, NGOs, and businesses assumed to have mature communication practices).
- Whether they were represented by other organisations (such as peak bodies or Registered Aboriginal Parties (RAPs)/Prescribed Body Corporates (PBCs)).
- Whether they could be resource poor and potentially not monitoring communications.
- The likelihood, extent or severity of potential risks and impacts to the relevant person's functions, activities and interests.

Our general approach was to implement at least the minimum level effort described in Table 11-3 for each type of stakeholder.

Table 11-3 Levels of Effort Examples

Relevant person	Minimum Level of effort (1 being highest)	Rationale
RAP or PBC	1	Can be under-resourced. Important conduit to community.
Fishing peak body- SIV, TA and SETFIA – cover the majority of potentially impacted fishers	1	Important conduit to members.
Individual fisher-not represented	2	Experience tells us they do not like to be over-engaged and will respond if wish to engage.
Individual fisher-represented	None	If clearly represented, they generally would not wish to be contacted.
Fishers – smaller representative bodies such as local co-ops and sub-regional groups	2	Reasonable maturity, monitor correspondence as a primary function, and represented by peak body.
Local conservation group	2	Typically responsive in the Otway region when a project of interest.
Business	2	Monitoring correspondence is a critical business function.
Local government authority	2	High level of administrative capability.

Table 11-4 Levels of Effort

Level of effort	Description of minimum follow up to initial contact
1	Multiple calls and emails to elicit a response if none received. Email notification advising consultation closing with respect to the relevant person
2	Email to notify the relevant person that we were approaching the time of submission of the EP to NOPSEMA. (Not required if already in dialogue) For unrepresented fishers, SMS reminders sent where contact numbers were ascertainable to better suit their complex work hours.

11.3.1.5 Extended Enquiry

The majority of relevant persons were expected to be ascertainable through the systematic search described in Section 11.3.1. However, we considered that some relevant persons might be missed due to factors including geographic location or inadequate communication from their representative bodies. Through extended enquiry, reasonable additional efforts were made to contact these persons.

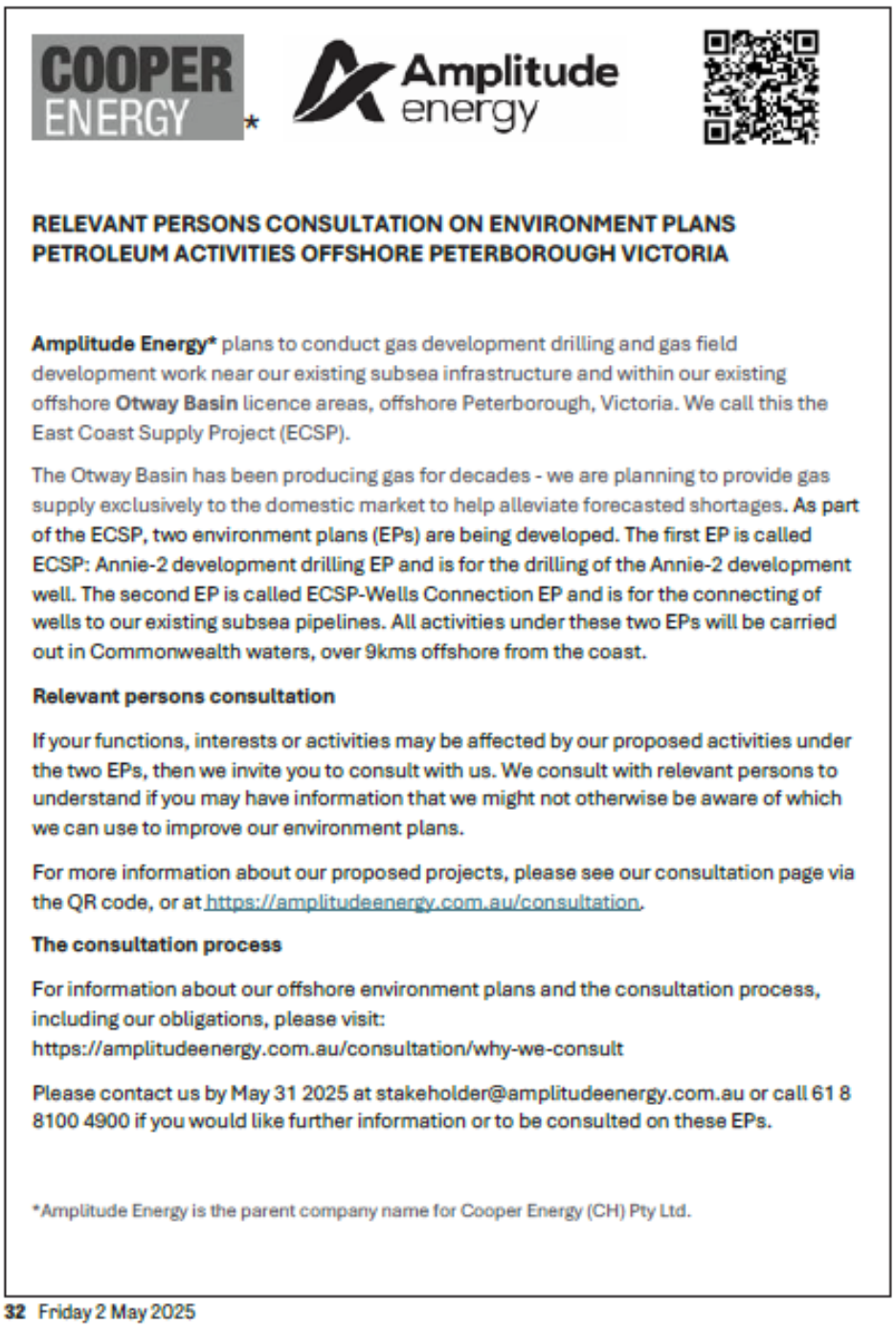
Extended enquiry comprised media advertisements in late April/early May 2025 (with some added late May 2025 and mid-July 2025 – see Figure 11-3 and Figure 11-4) inviting consultation through:

- Coastal regional press over the CFA and extended east to Southern NSW, west to Robe SA, and south to King Island (see map in Figure 11-6).
- Melbourne metropolitan (state-wide) press – *The Herald Sun.*
- National Indigenous media - *Koori Mail* and *National Indigenous Times.*

- National press through *The Australian.*

A link to the consultation web pages was also provided on our Amplitude Energy website.

Examples of posted advertisements are below:



COOPER ENERGY* Amplitude energy

RELEVANT PERSONS CONSULTATION ON ENVIRONMENT PLANS PETROLEUM ACTIVITIES OFFSHORE PETERBOROUGH VICTORIA

Amplitude Energy* plans to conduct gas development drilling and gas field development work near our existing subsea infrastructure and within our existing offshore **Otway Basin** licence areas, offshore Peterborough, Victoria. We call this the East Coast Supply Project (ECSP).

The Otway Basin has been producing gas for decades - we are planning to provide gas supply exclusively to the domestic market to help alleviate forecasted shortages. As part of the ECSP, two environment plans (EPs) are being developed. The first EP is called ECSP: Annie-2 development drilling EP and is for the drilling of the Annie-2 development well. The second EP is called ECSP-Wells Connection EP and is for the connecting of wells to our existing subsea pipelines. All activities under these two EPs will be carried out in Commonwealth waters, over 9kms offshore from the coast.

Relevant persons consultation

If your functions, interests or activities may be affected by our proposed activities under the two EPs, then we invite you to consult with us. We consult with relevant persons to understand if you may have information that we might not otherwise be aware of which we can use to improve our environment plans.

For more information about our proposed projects, please see our consultation page via the QR code, or at https://amplitudeenergy.com.au/consultation.

The consultation process

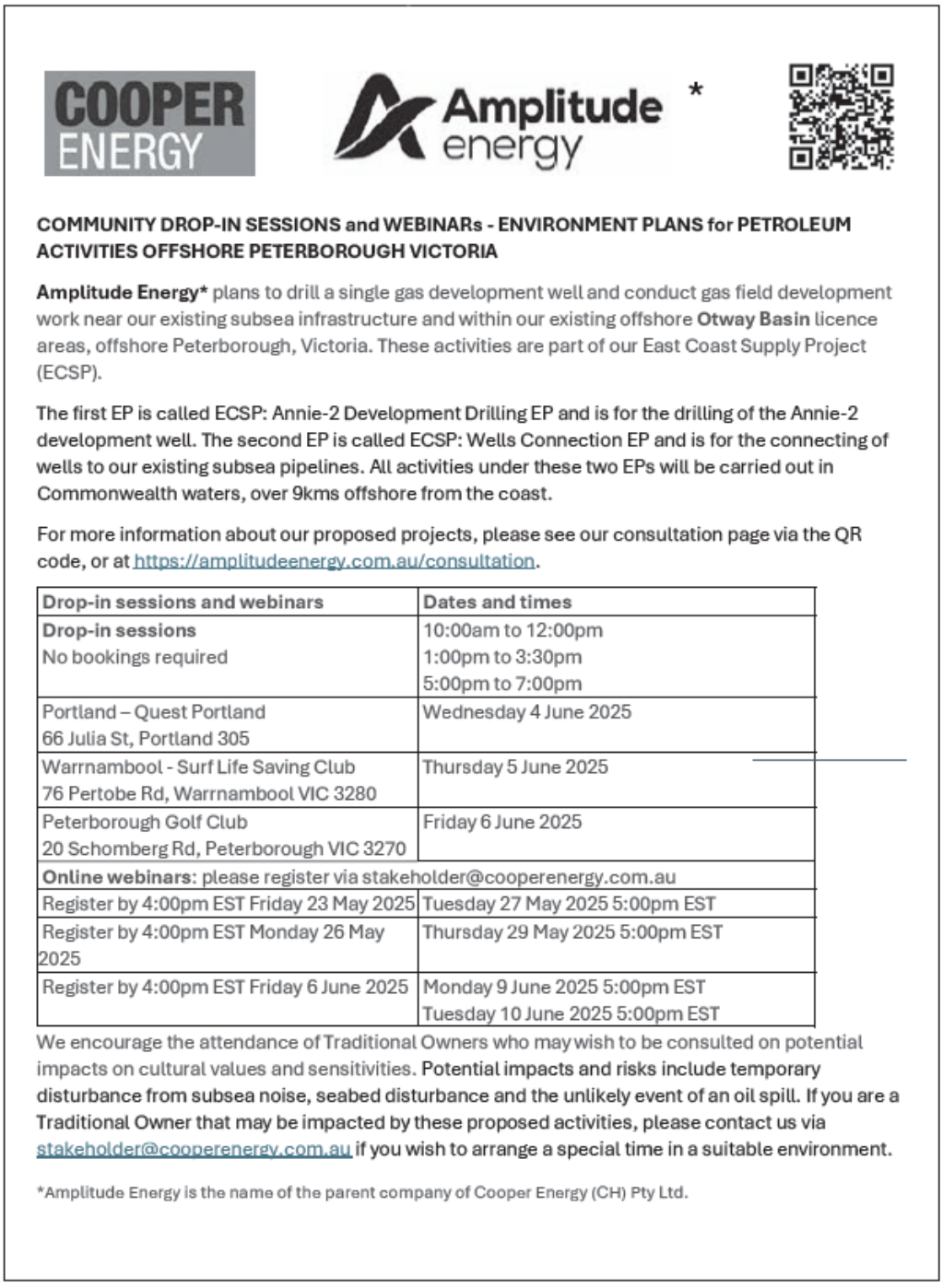
For information about our offshore environment plans and the consultation process, including our obligations, please visit:
https://amplitudeenergy.com.au/consultation/why-we-consult

Please contact us by May 31 2025 at stakeholder@amplitudeenergy.com.au or call 61 8 8100 4900 if you would like further information or to be consulted on these EPs.

*Amplitude Energy is the parent company name for Cooper Energy (CH) Pty Ltd.

32 Friday 2 May 2025

Figure 11-3: Torquay Surf Coast Times (*2 May 2025*)



COOPER ENERGY

Amplitude energy *

COMMUNITY DROP-IN SESSIONS and WEBINARs - ENVIRONMENT PLANS for PETROLEUM ACTIVITIES OFFSHORE PETERBOROUGH VICTORIA

Amplitude Energy* plans to drill a single gas development well and conduct gas field development work near our existing subsea infrastructure and within our existing offshore **Otway Basin** licence areas, offshore Peterborough, Victoria. These activities are part of our East Coast Supply Project (ECSP).

The first EP is called ECSP: Annie-2 Development Drilling EP and is for the drilling of the Annie-2 development well. The second EP is called ECSP: Wells Connection EP and is for the connecting of wells to our existing subsea pipelines. All activities under these two EPs will be carried out in Commonwealth waters, over 9kms offshore from the coast.

For more information about our proposed projects, please see our consultation page via the QR code, or at https://amplitudeenergy.com.au/consultation.

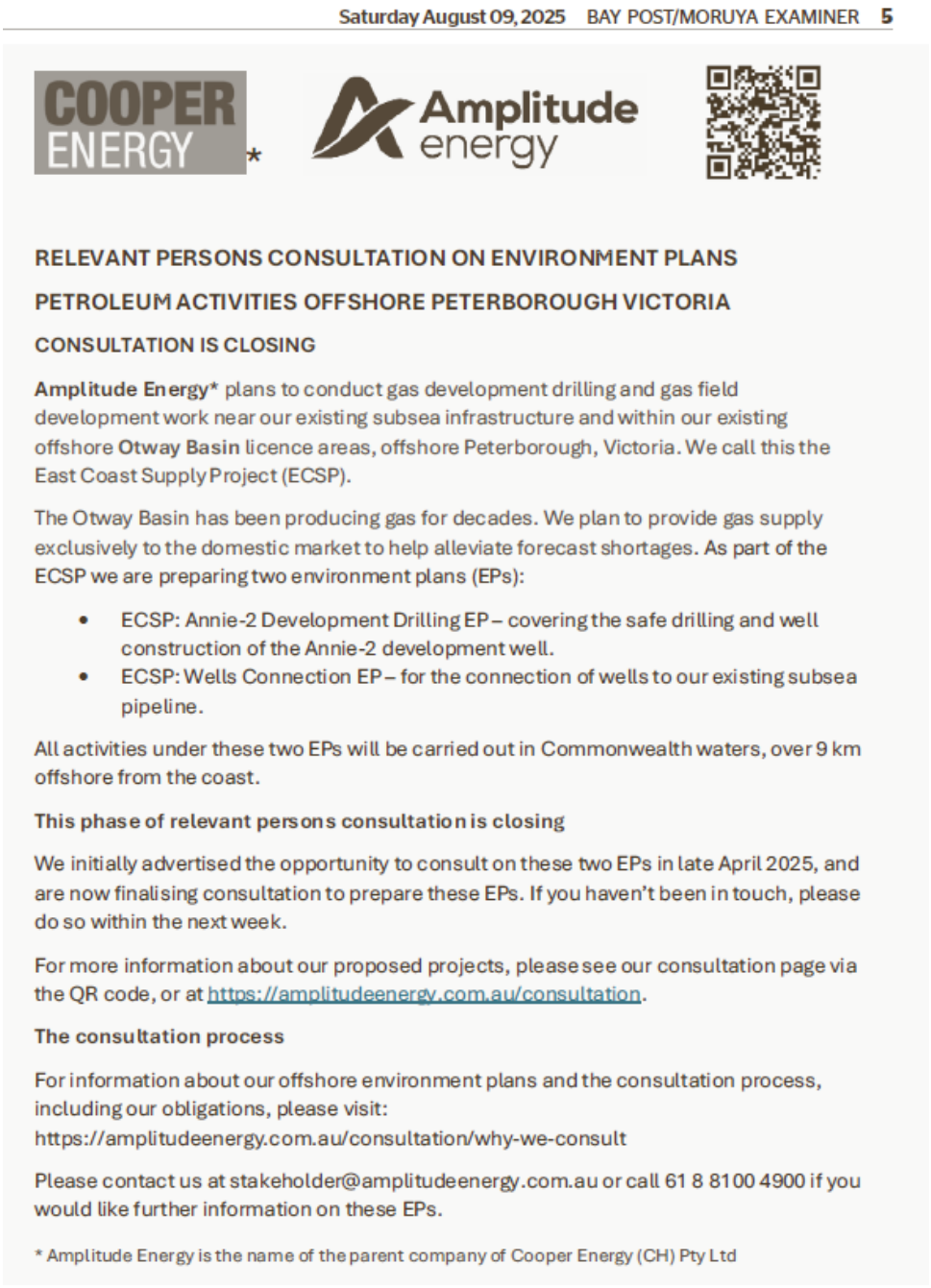
Drop-in sessions and webinars	**Dates and times**
Drop-in sessions No bookings required	10:00am to 12:00pm 1:00pm to 3:30pm 5:00pm to 7:00pm
Portland – Quest Portland 66 Julia St, Portland 305	Wednesday 4 June 2025
Warrnambool - Surf Life Saving Club 76 Pertobe Rd, Warrnambool VIC 3280	Thursday 5 June 2025
Peterborough Golf Club 20 Schomberg Rd, Peterborough VIC 3270	Friday 6 June 2025
Online webinars: please register via stakeholder@cooperenergy.com.au	
Register by 4:00pm EST Friday 23 May 2025	Tuesday 27 May 2025 5:00pm EST
Register by 4:00pm EST Monday 26 May 2025	Thursday 29 May 2025 5:00pm EST
Register by 4:00pm EST Friday 6 June 2025	Monday 9 June 2025 5:00pm EST Tuesday 10 June 2025 5:00pm EST

We encourage the attendance of Traditional Owners who may wish to be consulted on potential impacts on cultural values and sensitivities. Potential impacts and risks include temporary disturbance from subsea noise, seabed disturbance and the unlikely event of an oil spill. If you are a Traditional Owner that may be impacted by these proposed activities, please contact us via stakeholder@cooperenergy.com.au if you wish to arrange a special time in a suitable environment.

*Amplitude Energy is the name of the parent company of Cooper Energy (CH) Pty Ltd.

www.koorimail.com

Figure 11-4: Koori Mail - Drop-in Sessions (21 May 2025)



Saturday August 09, 2025 BAY POST/MORUYA EXAMINER 5

COOPER ENERGY* Amplitude energy

RELEVANT PERSONS CONSULTATION ON ENVIRONMENT PLANS

PETROLEUM ACTIVITIES OFFSHORE PETERBOROUGH VICTORIA

CONSULTATION IS CLOSING

Amplitude Energy* plans to conduct gas development drilling and gas field development work near our existing subsea infrastructure and within our existing offshore **Otway Basin** licence areas, offshore Peterborough, Victoria. We call this the East Coast Supply Project (ECSP).

The Otway Basin has been producing gas for decades. We plan to provide gas supply exclusively to the domestic market to help alleviate forecast shortages. As part of the ECSP we are preparing two environment plans (EPs):

- ECSP: Annie-2 Development Drilling EP – covering the safe drilling and well construction of the Annie-2 development well.
- ECSP: Wells Connection EP – for the connection of wells to our existing subsea pipeline.

All activities under these two EPs will be carried out in Commonwealth waters, over 9 km offshore from the coast.

This phase of relevant persons consultation is closing

We initially advertised the opportunity to consult on these two EPs in late April 2025, and are now finalising consultation to prepare these EPs. If you haven't been in touch, please do so within the next week.

For more information about our proposed projects, please see our consultation page via the QR code, or at https://amplitudeenergy.com.au/consultation.

The consultation process

For information about our offshore environment plans and the consultation process, including our obligations, please visit:
https://amplitudeenergy.com.au/consultation/why-we-consult

Please contact us at stakeholder@amplitudeenergy.com.au or call 61 8 8100 4900 if you would like further information on these EPs.

* Amplitude Energy is the name of the parent company of Cooper Energy (CH) Pty Ltd

Figure 11-5 Bay Post/Moruya Examiner – Consultation Closing (9 August 2025)

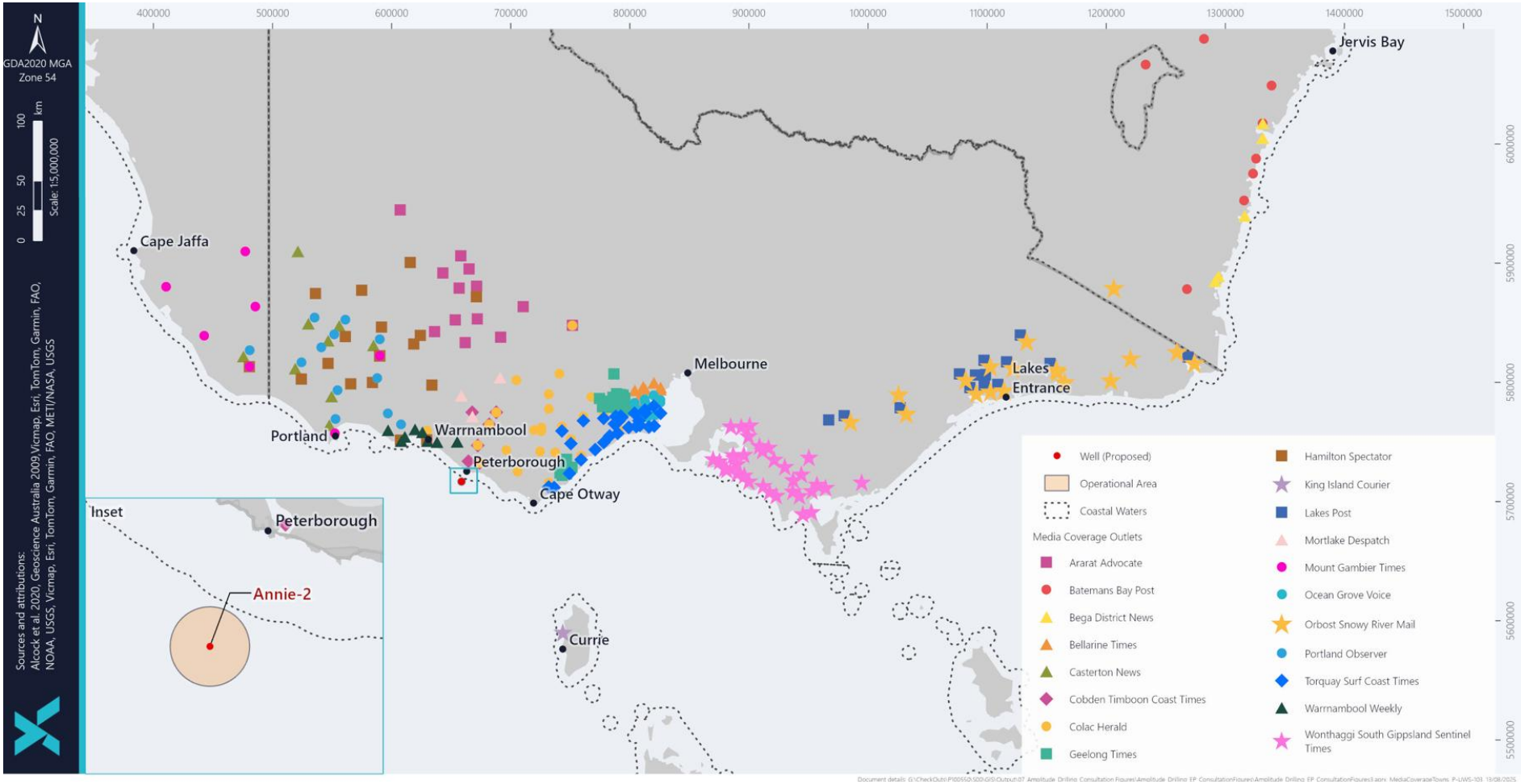


Figure 11-6 Distribution of Advertisements in Regional Press

In addition to using the above efforts and tools to identify relevant persons, we also ran a further radio, social media and print media campaign to promote the community drop-in sessions and webinars which comprised the following:

- Regional newspaper over western Victoria that also provided good coverage over the EMAC, GMTOAC and WTOAC RAP areas.
- Radio advertisements on local radio stations (Coast FM, 37B FM, Mixx FM, 3HA FM) in areas covering the CFA between 2 June 2025 and 6 June (4 x 30 sec per day for 5 days).
- Geo-targeted Facebook advertisements designed to specifically target the area in and around the CFA published between 21 May 2025 to 31 May 2025.
- A dedicated page on the Amplitude Energy website.
- A link to that page on the corporate website home page.

A recording of the webinar was also posted on the consultation website to allow any interested person access to information about the proposed activities.

11.3.1.6 Summary of media used

Table 11-5: Summary of Advertisements Run

Media	Invitation to consult	Drop-in sessions	Closing consultation
Koori Mail	7 May 2025	21 May 2025	13 August 2025
National Indigenous Times	5 May 2025 (for 7 days)		
The Australian	1 May 2025		7 August 2025
The Herald Sun	1 May 2025		7 August 2025
Ararat Advocate		23 May 2025	
Batemans Bay Post	19 July 2025		9 August 2025
Bellarine Times	2 May 2025		8 August 2025
Bega District News	19 July 2025		9 August 2025
Casterton News	29 April 2025	20 May 2025	5 August 2025
Cobden Timboon Coast Times	30 April 2025	21 May 2025	6 August 2025
Colac Herald	2 May 2025	21 May 2025	6 August 2025
Geelong Times	2 May 2025		8 August 2025
Hamilton Spectator	2 May 2025	23 May 2025	8 August 2025
Lakes Post	14 May 2025		6 August 2025
King Island Courier	29 May 2025		7 August 2025
Mortlake Dispatch	1 May 2025	22 May 2025	7 August 2025
Mt Gambier Times	2 May 2025		8 August 2025
Ocean Grove Voice	2 May 2025		8 August 2025
Orbost Snowy River Mail	23 July 2025		6 August 2025
Portland Observer	2 May 2025	23 May 2025	8 August 2025
Torquay Surf Coast Times	2 May 2025		8 August 2025
Warrnambool Weekly	2 May 2025	23 May 2025	8 August 2025
Wonthaggi South Gippsland Sentinel Times	13 May 2025		5 August 2025
Facebook	7 May 2025 (14 days)	21 May 2025 (10 days)	18 August 2025 (1 month)

Media	Invitation to consult	Drop-in sessions	Closing consultation
Instagram	7 May 2025 (14 Days)	21 May 2025 (10 days)	18 August 2025 (1 month)
Radio 3YB FM & Coast FM	2 May 2025 (5 days)	2 June 2025 (5 days)	13 August 2025 (18 days)

11.3.1.7 Community Drop-in Sessions

Community drop-in sessions were broadly advertised as described in Section 11.3.1.5,

Amplitude Energy made specific efforts to ensure that the 9 community drop-in sessions it held were widely advertised (as described in Table 11-5), easily accessible, and provided at a range of times and dates, so as to maximise opportunities for relevant persons to participate in the consultation process. Traditional Owners were specifically encouraged to attend these sessions, and were encouraged to notify us if they had any specific requirements (e.g. for special times or separate spaces to other community members).

The 9 community drop-in sessions conducted are listed in Table 11-6.

Table 11-6 Community Drop-in Sessions

Session	Date	Location
1.	10.00am – 12.00pm, Wednesday 4 June 2025	Quest Portland, 66 Julia St, Portland
2.	1.00pm – 3.30pm, Wednesday 4 June 2025	Quest Portland, 66 Julia St, Portland
3.	5.00pm – 7.00pm, Wednesday 4 June 2025	Quest Portland, 66 Julia St, Portland
4.	10.00am – 12.00pm, Thursday 5 June 2025	Warrnambool Surf Life Saving Club, 76 Pertobe Rd, Warrnambool
5.	1.00pm – 3.30pm, Thursday 5 June 2025	Warrnambool Surf Life Saving Club, 76 Pertobe Rd, Warrnambool
6.	5.00pm – 7.00pm, Thursday 5 June 2025	Warrnambool Surf Life Saving Club, 76 Pertobe Rd, Warrnambool
7.	10.00am – 12.00pm, Friday 6 June 2025	Peterborough Golf Club, 20 Schomberg Rd, Peterborough
8.	1.00pm – 3.30pm, Friday 6 June 2025	Peterborough Golf Club, 20 Schomberg Rd, Peterborough
9.	5.00pm – 7.00pm, Friday 6 June 2025	Peterborough Golf Club, 20 Schomberg Rd, Peterborough

11.3.1.8 Webinars

Opportunities were provided to join 6 separate webinars (Table 11-7). Sessions 1-4 were broadly advertised in Western Victoria as described in Section 11.3.1.5. Invitations to join these webinars were sent via email to all non-government relevant persons as identified at that time. Amplitude Energy made specific efforts to spread these webinar dates across a range of dates, to maximise opportunities for participation.

This provided another opportunity for relevant persons to self-identify, and to receive sufficient information to understand how their functions, interests or activities may be impacted by our activities.

Table 11-7: Webinars

Session	Date	Details
1.	Tuesday 27 May 2025 5:00pm EST	Advertised in regional press, social media and radio.
2.	Thursday 29 May 2025 5:00pm EST	
3.	Monday 9 June 2025 5:00pm EST	Advertised in regional press, social media and radio, and invitations sent to non-government relevant persons as identified at the time.
4.	Tuesday 10 June 2025 5:00pm EST	
5.	Wednesday 18 June 2025 5:00pm EST	Invitations sent to non-government relevant persons as identified at the time.
6.	Thursday 19 June 2025 5:00pm EST	

A webinar recording was posted on our website and made available from 18 June 2025 up until submission of this EP.

11.3.1.9 Self-Identification

In addition to relevant persons that were identified by us, other relevant persons were able to self-identify at any time.

Our approach was not to impose any unnecessary barriers to being considered a relevant person. However, the person would need to demonstrate more than a general interest, and instead advise how their functions, interests or activities may be affected by our activities and provide full contact details to be thereafter included in consultation as a relevant person (if they wished to be included).

Once confirmed as relevant persons, any self-identified relevant persons were consulted in accordance with the process already described in section 11.3. Levels of effort to communicate described in section 11.3.1.4 were designated as level 2, as once such a relevant person had indicated a willingness to engage and provided contact details, it was reasonable to assume any follow up correspondence was received and no further effort was needed to pursue a response.

Two individuals self-identified as relevant persons during community drop-in sessions in Warrnambool, having seen the advertising via social media. Another person from Glenelg Shire self-idented in response to our advertising of the community sessions and attended one of our webinars.

11.3.2 Providing Relevant Persons Sufficient Information – 25(2)

To satisfy regulatory requirements, Amplitude Energy must give each relevant person sufficient information to allow them to make an informed assessment of the possible consequences of the proposed activity on their functions, interests or activities. Amplitude Energy has prepared and provided information to relevant persons with these requirements and applicable guidelines in mind.

Our approach was to build information flow from the simple to the complex, so relevant persons could gain the depth of information needed relative to their category, and likelihood and degree to which they could be impacted. Noting many relevant persons either have limited time to read through correspondence and/or are experiencing consultation fatigue, our approach to providing sufficient information to relevant persons, was typically to:

- First, capture the relevant person's attention that their functions, interests or activities may be affected by our activities under the EP.

- Second, bring key risks and impacts to their further attention.
- Third, draw them to our website where more detailed information was available, and ensure pathways for additional information were clear.

Table 11-8 Information Provided

Information type	Purpose	Key content
Project webpage	The project webpage on the consultation website provides information specific to this EP.	• Why we plan to drill the well • Description of proposed activities • Link to information sheet with • Map • Diagrams and images • Activity detail • Simple layout of high-level impacts and risks • Easy links to areas of interest • Activity detail • Environmental impacts and risks • Easy links to specific high-level impacts and risks • Interaction with other marine users • Seabed disturbance • Underwater sound • Greenhouse gas emissions • Other atmospheric emissions • Light emissions • Planned discharges • Invasive marine species • Unplanned interactions with marine fauna • Accidental or uncontrolled hydrocarbon release • Loss of Materials or Waste Overboard • Easy links to tailored information for the following groups: • Research • Marine recreation • Conservation and environment • Recreational fishing • Commercial fishing • Coastal community • Coastal business • First Nations • Contact form.
Consultation pages	The consultation pages and the corporate website provide an overview of different activities, and other useful information for relevant persons and other stakeholders.	• Amplitude Energy's general activities and maps of offshore titles • Link to NOPSEMA's community consultation brochure • Amplitude Energy's consultation obligations • Purpose of consulting with relevant persons

Information type	Purpose	Key content
		• Description of an environment plan • Overview of the different activities that might occur in the exploration and production lifecycle • Decommissioning • Oil spill preparedness.
Bulk email # 1	Invited relevant persons to consult on the proposed activities	• Noted location of proposed activities. • Provided background information of the existing CHN fields and the need for additional gas supply. • Purpose of consultation. • Why we consult with relevant persons. • Described the development activities proposed. • Provided overview of timing and duration of proposed activities. • Downloadable information sheet with maps and diagrams • Link to consultation webpage where they could find tailored information. • Queried as to whether they knew other relevant persons. • Link to NOPSEMA brochure “Consultation on offshore petroleum environment plans – information for the community”. • Asked that if an organisation they share information with members or other relevant persons. • Provided an indicative consultation timeline with flexibility noted. • Provided “quick response table” to make responding easier. • Provided clear contact details. • Noted that they should advise if any information they provided was not to be published. • Offered to meet in a matter that meet the relevant person’s needs.
Bulk email # 2	Advised non-government relevant persons of community consultation drop-in sessions and webinars.	• Invited attendance at community consultation drop-in sessions and/or webinars.
Bulk email #3	Advised that this phase of consultation was closing	• Noted this phase of consultation was closing. • EP is being prepared for submission to NOPSEMA. • Requested that if they had not already done so, they contact by the end of the following week. • Noted that ongoing consultation would continue for the life of the project.

Our website was structured so a person could access broad information, but with highlighted pathways to areas of particular interest. This allowed the website user to navigate easily to specific

areas, while ensuring all other topics were visible, in case they had wider interests than would be immediately obvious to us. The website provided broader, contextual information about the activities (e.g. that the gas will be supplied into the East Coast market where there is an expected shortfall of gas supply in future etc), to provide transparency to relevant persons, and explain why we are undertaking these activities, and how they fit into our future plans.

A clear point of contact was provided on the website, and in all correspondence, for relevant persons to direct their communications, seek additional information or clarifications, or request meetings (as applicable).

A link to the NOPSEMA brochure "Consultation on offshore petroleum environment plans – Information for the community" was also included on the website, to ensure relevant persons understood what to expect with the consultation process and how to participate effectively.

The Amplitude Energy website was continuously updated during the consultation process to include relevant information. A video presentation used for webinars was uploaded for general access via the consultation website.

We did not provide our draft EP or draft chapters to relevant persons prior to submission to NOPSEMA, and no requests for such were made by relevant persons. We considered that sharing any early drafts of the EP would be unproductive, as it would not capture the full learnings or benefits of the consultation process.

In addition to the reasonable general information that was provided to all relevant persons, Amplitude Energy also provided information responsively to relevant persons. When responding to relevant persons, specific inquiries were made to confirm whether there was any further information required for those relevant persons to consider the potential impact of the activities on their functions or interests.

11.3.3 Providing Relevant Persons Reasonable Period – 25(3)

To satisfy regulatory requirements, Amplitude Energy must provide relevant persons a reasonable period to identify the possible consequences of the proposed activity on their functions, interests or activities and to respond. The time required for this to occur depends on factors such as the hours available to the relevant person, complexity of issues that may be raised and, in the case of organisations, whether members and/or management are to be consulted. Noting that complex issues may arise in consultation, and it is an iterative process, reasonable time must be given to both the relevant person and Amplitude Energy to review and respond to each other's feedback and/or requests. These reasonable timeframes should be determined on a case-by-case basis and appropriately communicated.

With this in mind, Amplitude Energy commenced consultation with one Traditional Owner group in December 2024, in line with their consultation protocol that requested early engagement. This resulted in a positive meeting in April 2025 with members of the PBC. Consultation also commenced in April 2025 with the closest RAP to the proposed activities, to ensure they would have sufficient time to call a properly notified and conducted meeting in accordance with the rules of their organisation, should that be their decision.

For the majority of relevant persons, consultation commenced later in May 2025, with a mailout containing sufficient information for a relevant person to determine whether their functions, interests or activities might be affected. Weblinks included in the email took them to specific locations on the website, and the website was designed so they could find the information that might be most relevant to their specific interests. Consultation information and opportunities were provided up until late August 2025. Throughout this period, we invited relevant persons to contact

us if they required further information or wished to discuss any potential impacts or risks that might affect their functions, interests or activities.

We also provided significant flexibility in when, where and how we could discuss feedback, which included phone calls, online meetings and exchange of correspondence up until late August 2025. We had regard to any material provided to us by relevant persons setting out how they wished to be consulted when engaging with those relevant persons. We also informed relevant persons of our planned consultation schedule (per Figure 11-7), whilst allowing for variations to that schedule based on their reasonable input.

As a general rule, we considered 30 days to be a reasonable period for relevant persons to either raise initial issues or signal their intention to consult and potentially request additional time or information to do so. Notwithstanding this general view, we took an adaptive approach to the period of time and number of contact attempts made for relevant persons and sought to ensure they were given reasonable opportunities to raise any concerns or queries they had about the proposed activities.

The indicative base timeline for consultation is as follows:

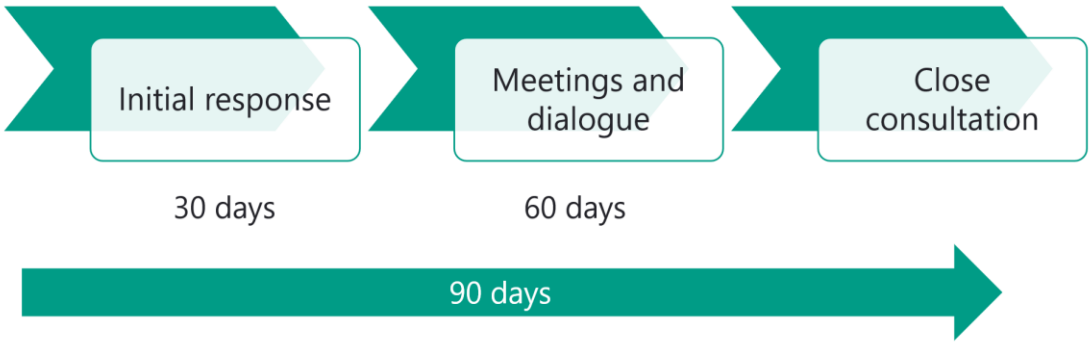


Figure 11-7: Indicative Timeline

The timeline could be extended based on individual relevant person's reasonable requests.

Other factors we considered in deciding whether a relevant person had been provided with a reasonable period for consultation, were whether during dialogue with the relevant person, a point was reached where either no new issues were being raised for consideration, or they became unresponsive.

As described in Section 11.4, for First Nations groups, consultation periods were extended beyond target dates and benchmarked against other relevant legislative processes.

No relevant person indicated to Amplitude Energy that they considered that insufficient time for consultation was provided.

Amplitude Energy considers that a reasonable period of time was afforded to all relevant persons who wished to be consulted in the course of the preparation of this EP.

11.3.4 Sensitive Information – 25(4)

In accordance with regulation 25(4) of the OPGGS(E)R, when engaging in consultation, Amplitude Energy advised relevant persons that they may request that particular information provided during consultation not be published, and that information subject to that request will not be published in the Environmental Plans. See Table 11-8 wherein the initial email noted that respondents could request that sensitive information not be published.

11.4 Consultation Approach with Traditional Owners

Amplitude Energy is committed to carrying out respectful and effective consultation with relevant Traditional Owners and building positive and ongoing relationships. In planning, developing and implementing its consultation process with Traditional Owners, we have been cognisant of:

- NOPSEMA's consultation guideline (GL2086 – Consultation in the course of preparing an environment plan – May 2024).
- Recent judicial decisions, namely Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193, Cooper v NOPSEMA (No 2) [2023] FCA 1158 and Munkara v Santos NA Barossa Pty Ltd (No 3) [2024] FCA 9.
- Applicable legislation including the Aboriginal Heritage Act 2006 (Vic) that recognises Registered Aboriginal Parties (RAPs) and the Native Title Act 1993 (Cth) that recognises native titleholders.

It is clear from the Full Federal Court's decision in the *Tipakalippa* appeal (and further reflected in NOPSEMA's consultation guidelines for Regulation 25) that some reasonable limits must be applied to titleholder's duty to consult with relevant persons, to ensure that the process is workable. To this end, a titleholder's obligation to consult under regulation 25 of the OPGGS(E)R may be discharged without:

- Accommodating every extension of time or other request made by a particular consultee.
- Obtaining consent from the consultee to the activity.
- Obtaining confirmation from the consultee, that the process has been carried out to their subjective preferences or individual satisfaction.
- What the titleholder must do is provide:
  - Sufficient information to enable the relevant person to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.
  - A reasonable period of time for the relevant person to provide feedback, and for the titleholder to assess their objections or claims, and action the assessment and response.

While Amplitude Energy identified both RAPs and PBCs and individual Traditional Owners as relevant persons, Amplitude Energy had regard to the rule books and stated preferences of RAPs and PBCs that those organisations were the nominated representative entities to engage in consultation. Amplitude Energy specifically inquired with relevant RAPs and PBCs as to whether they were aware of other groups or individuals with whom Amplitude Energy should consult, to ensure that it was inclusive and wide-reaching in its consultation with Traditional Owners.

Individual Traditional Owners and Traditional Owners who may not be affiliated with a RAP or PBC were able to self-identify as relevant persons throughout the consultation process, and extended enquiry, webinars and drop-in sessions afforded additional opportunities for any such relevant persons to engage with Amplitude Energy in consultation (using the methodology set out above).

11.4.1 Consultation Approach with Traditional Owners Representative Groups

Having regard to the above, our consultation with RAPs and PBCs has included the following key actions:

1. Undertaking desktop research to identify RAPs and PBCs overlapping the CFA.
2. Providing each of the identified RAPs and PBCs with reasonable information in plain English about the activities covered by this EP.

3. Explaining to each of the identified RAPs and PBCs the purpose of consultation, and how cultural values and heritage are important to the preparation of the EP.
4. Reviewing published literature/sources (e.g. consultation guidelines, protocols or Sea Country plans) for each identified RAP and PBC, to improve our understanding of the cultural features and heritage values overlapping with the operational area or EMBA.
5. Reviewing published rules, constitutions and other material to identify specific requirements of organisations for consultation (e.g. notice requirements, preferences for how material is prepared, decision making processes).
6. Enquiring how each of these identified RAP/PBCs wish to be consulted.
7. Enquiring directly with each identified RAP/PBC as to whether they have any information they wish to provide on their cultural values and heritage.
8. Enquiring directly with each identified RAP/PBC as to whether they are authorised to consult on behalf of their members.
9. Requesting that each identified RAP/PBC shares consultation information with their members and any other person they consider relevant.
10. Informing identified RAPs/PBCs of our targeted end date for carrying out consultation, but that we can also accommodate reasonable requests for extensions of time.

If there was no response from the RAP/PBC to our initial communication, we followed up at least 4 times, and (where possible) via multiple communication channels. This demonstrates a reasonable level of effort, respecting that participation in consultation is voluntary (for the relevant person), that the activity may not be a concern or priority for some RAP/PBCs (as some RAP/PBCs have expressly confirmed), and that 'spamming' such organisations may lead to 'consultation fatigue'.

Where a RAP/PBC responded seeking further engagement, we used best endeavours to conduct consultation in accordance with their expressed preferences and requirements. For example, where they requested a face-to-face meeting or presentation, then (where practicable) it was conducted at their chosen time and location, in their preferred format (including pre-approved agendas, topics and PowerPoint slides) and with their nominated attendees. We also offered and provided financial assistance to cover the associated transportation and meeting costs (as appropriate). Additionally, where a RAP/PBC provided specific guidance as to how it preferred consultation to occur, significant efforts were made to tailor our consultation process accordingly. From the outset of consultation, we also sought to communicate clearly to those relevant persons, the steps we had already taken to tailor the process to their stated preferences, and where there might be further opportunities to do so.

For any meetings or presentations conducted with RAP/PBCs, special care was taken to ensure that we used materials that were tailored to the interests of the relevant RAP/PBC, were in plain language suitable for an audience with a non-technical background and incorporated extensive visual elements to aid understanding. In preparing consultation material specific to Traditional Owners, Amplitude Energy reviewed the RAP organisation's own published materials to get a feel for the communication style with their members and seek to emulate it and invited their feedback on the materials provided. We also engaged an external consultant to review consultation material for Traditional Owners, to ensure that it was fit-for-purpose and culturally appropriate and sought to adhere to specific preferences and protocols provided by any Traditional Owner groups, to the extent reasonably possible.

Our subject matter experts also attended meetings and presentations to Traditional Owner groups, so that they could hear feedback directly, and respond promptly and accurately to any questions. We also invited and answered questions throughout the meeting, to facilitate a two-way dialogue. This allowed the audience to provide relevant information to us, and to ask questions to get any further information they required, or fill any gaps in understanding, which they may have had. It also

demonstrated to us that our audience was clearly engaging with, and understanding, the content of our presentation, based on their considered, detailed and extensive questions.

Where a RAP/PBC requested additional time to conduct a meeting with members, we considered 42 days to be a reasonable timeframe for calling and preparing for that meeting. This timeframe reflects that 21 days is often the minimum notice period provided in PBCs' Rule Books and then allows for a further 21 days to perform the associated administrative tasks. We did not rigidly enforce a 42-day time limit but treated it as a useful reference in discussions with the RAP/PBCs and were willing to accommodate reasonable extensions of time.

In determining whether we had provided a reasonable period of time for consultation with RAP/PBCs, we benchmarked this against other relevant legislative processes, for example:

- Regulation 30 of the OPGGS(E)R, which sets out a public consultation period of 30 days.
- The Department of Mines and Petroleum "Guidelines for Consultation with Indigenous People by Mineral Explorers" (Department of Mines, Industry Regulation and Safety, 2004)**[1]** which directs a period of 21- 30 days of consultation with Traditional Owners.
- While repealed, guidance taken from the Aboriginal Cultural Heritage Act 2021—Consultation Guidelines (Government of Western Australia, 2023) suggests that up to 12 weeks may be a reasonable period of time to allow identification, contact, and response, from Traditional Owners (subject to any alternative timeframe being agreed through co-design of consultation).
- Recent DCCEEW consultation on offshore wind zone (Southern Ocean) in the same general offshore region as this project allowed for 2 months.

Amplitude Energy notes that in *Tipakalippa*, at paragraph 136, Lee J commented that "…it must be taken to be the regulatory intention that the consultation requirement cannot be one that is incapable of being complied with in a reasonable time." In line with this reasoning and having regard to the benchmarks referred to above, Amplitude Energy considers that the total period of time provided to RAP/PBCs for consultation is reasonable, even on a highly conservative view.

11.4.2 Consultation Approach with Individual Traditional Owners

Our primary efforts to proactively consult with Traditional Owners were made through engagement with the RAP/PBCs as described in the section above. In adopting this approach to consultation with Traditional Owner groups, we were cognisant of:

- The United Nations Declaration of the Rights of Indigenous People which encourages consultation to be undertaken with Indigenous peoples' through their chosen representative entity.
- The Aboriginal Heritage Act 2006 (Vic) which recognises RAPs as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage and the primary source of advice relating to Aboriginal places and objects in the appointed region.
- The published rules and constitutions of such RAP/PBCs, and whether their objectives and powers indicated that they were the appropriate authority to engage with in respect of such matters, on behalf of their members.

We also recognised that by approaching individual members of a RAP/PBC directly, we may be perceived to be undermining their nominated representative body and circumventing its proper processes. This could be perceived as disrespectful, cause division within those communities, and may not actually be effective in establishing what cultural features, values or beliefs are held by the relevant peoples, as a people. This was particularly the case where PBCs and RAPs responded to

Amplitude Energy confirming that they considered their organisation to be the correct body to be consulting with for the purpose of the regulations.

Notwithstanding the above, broader efforts were also made to consult with any interested individual Traditional Owners through the following key actions:

1. Placing public notice advertisements in selected local, state and national newspapers to facilitate the opportunity for First Nations persons to self-identify and consult with us. This included the Koori Mail and the National Indigenous Times).
2. Requesting that identified RAP/PBCs distribute consultation information to their members and any other individuals they consider to be relevant, to enable them to self-identify and consult with us.
3. Requesting that identified RAP/PBCs identify any individuals that should be consulted, so that we could contact them directly.
4. Requesting that other First Nations organisations that were not relevant persons identify individuals that should be consulted so that we could contact them directly.

Where we consulted with any Traditional Owners, we provided information on the activities covered by the EP, an explanation of the purpose of consultation, and how cultural values and heritage are important to the preparation of the EP. We would also advise them if we were already in contact with their representative body (if that was not already apparent), so they could determine for themselves whether to engage with us directly or allow their representative body to do so.

In considering how to ensure that we reached Traditional Owners, through our extended enquiry methods, we had specific regard to:

- The public notification process provided under section 66 of the Native Title Act, where the Registrar notifies the general public through the Koori Mail and a local newspaper in the area.
- The content of our advertisements – which were specifically designed to be easily understood and to make it easy to seek further information (i.e. through our consultation website) or engagement with us (i.e. through a designated contact person).

Amplitude Energy has held regular internal meetings with environment and community engagement team members, to discuss this EP and in particular, our consultation process. As part of these meetings, we regularly reviewed and challenged the soundness of our consultation methodology and considered other opportunities to consult with individual Traditional Owners and/or RAP/PBCs. Some of the opportunities considered (but ultimately dismissed for the reasons outlined below) included:

- Requesting evidence from the RAP/PBCs that they had shared consultation information with their members and other persons they considered relevant, as per our repeated requests and since we did not have a line of sight to this. This option was ultimately discounted, as there has been nothing to suggest that any of the RAP/PBCs would not, or had not, fulfilled their role and responsibilities to members (e.g. by sharing information and complying with any member consultation requests). Therefore, it would have been inappropriate for us to question this, or to ask to review their communications, and this would be inconsistent with how we treat other organisations that represent communal interests.
- Attempting to contact members of RAP/PBCs directly, notwithstanding they had not self-identified and expressed interest in consultation directly with Amplitude Energy. This was ultimately considered to be inappropriate, given the strong rationale described above for treating RAP/PBCs as the primary point of contact, and appropriate authority to speak to the cultural values and sensitivities held by the group (rather than the beliefs of an individual). Additionally, Amplitude Energy was cognisant of the risk that seeking to identify and then contact individual

RAP/PBCs members, may be intrusive and unlawful from a privacy perspective, given that the members' contact details were not readily available from a public source or offered by the RAP/PBC itself.

- Attempting to speak with RAP/PBCs directly, by visiting their offices without having scheduled a formal meeting in advance. We determined that this would be inappropriate, as it would be inconsistent with our aim of engaging with Traditional Owners in a voluntary, respectful and productive way.

11.5 Reasonable Opportunity

In *Tipakalippa*, the Federal Court when considering the requirements for consultation under regulation 25 (then regulation 11A), had regard to case law concerning the requirements under the Native Title Act 1993 to provide a 'reasonable opportunity' to participate in decision-making. The Court indicated that under the Native Title Act, reasonable notice should be provided to relevant native title group members, but exhaustive communications with each and every person are not required. This approach has been endorsed by NOPSEMA in the context of regulation 25 consultation and can be found in the NOPSEMA guidelines.

Amplitude Energy considers that it provided all relevant persons a reasonable opportunity to participate in consultation through the process described in this EP.

11.6 Assessment of Merits of Claims or Objections

Amplitude Energy assessed the merit of any claims or objections raised by relevant persons during consultation (including ongoing consultation) in line with the following process.

For a claim to have merit, it must first and foremost be relevant to the EP and the activities captured by the EP. After passing this relevancy test, the objection or claim should have a reasonable and credible basis for related effects or impacts to occur. This test does not need to be exhaustive, as a proper construction of the Regulations requires that all reasonable matters should be assessed.

Once a claim or objection is considered both relevant and reasonable, Amplitude Energy responds as follows:

1. If the claim or objection raised by the Relevant Person is already addressed in the EP, Amplitude Energy will respond to the Relevant Person by outlining how the claim or objection has been considered and captured in the EP.
2. If, following Amplitude Energy's evaluation of the claim or objection, it results in new risks/impacts being identified and/or additional controls being developed, then the Amplitude Energy Management of Change Process is applied, and the outcomes are shared with the Relevant Person.

The above steps may comprise an iterative process, and there may be a point at which consultation on an issue is concluded (and the relevant obligations discharged) without the Relevant Person being satisfied with the outcome.

Amplitude Energy must have fully considered matters raised and demonstrate that impacts and risks of the activity are reduced to ALARP and an acceptable level.

In the case of Traditional Owners interests including intangible cultural heritage issues, Amplitude Energy will work with the Relevant Person to gain an appropriate understanding of the relevant claims or objections and aims to work collaboratively to manage and mitigate impacts and risks, where reasonably practicable.

As noted above, Amplitude Energy has satisfied its obligations under section 25 of the Regulations. Amplitude Energy acknowledges that relevant persons may have different views as to whether the consultation obligations have been discharged.

11.7 Compliance with Consultation Requirements

Section 11.2 sets out in comprehensive detail the steps that have been undertaken to ensure there has been full compliance with the consultation requirements for this EP.

This compliance can be summarised as follows:

- The steps outlined in section 11.3.1 had been followed, and resulting in reasonably ascertainable relevant persons being identified in Appendix 8 - .
- Sufficient information had been provided as described in section 11.3.2.
- Sufficient time had been provided as per section 11.3.3.
- The merits of objections or claims raised by relevant persons (if any) had been considered, and resultant measures (if any) proposed to address those impacts and risks had been communicated to the respective relevant persons and captured in the EP, as described in Appendix 8 - .
- The date that the current and potentially final phase of consultation was closing had been communicated to any relevant persons with whom an active dialogue had been established.

We consider that we have met the required statutory criteria for consultation for the EP, and in some cases engaged with relevant persons in a manner that has exceeded those criteria.

11.8 Report on Consultation – Regulation 24(b) OPGGS(E)R

The report on all consultations under regulation 25 of the OPGGS(E)R of any relevant person, which is provided in Appendix 8, includes:

- A summary of information provided to relevant persons.
- A summary of each response made by a relevant person, as required under regulation 24(b)(i) of the OPGGS(E)R.
- Our assessment of the merits of any objection or claim about the adverse impact of each activity, as required under regulation 24(b)(ii) of the OPGGS(E)R.
- Our response, or proposed response, to each objection or claim, as required under regulation 24(b)(iii) of the OPGGS(E)R.

12.0 Implementation

12.1 Amplitude Energy Management System (AEMS)

The AEMS is Amplitude Energy's integrated system which consolidates all of Amplitude's business processes into one system of management, to manage every aspect of Amplitude Energy's business (such as HSEC, Operations, Well Construction, Engineering and Finance) in accordance with a set of core concepts (Table 12-1).

The AEMS document hierarchy is shown in Figure 12-1 with the AEMS standards listed in Table 12-2 and Amplitude Energy's Health, Safety and Environment (HSE) Policy shown Figure 12-2.

Table 12-1: Amplitude Energy's Management System Core Concepts

Core Concepts	
People	How we organise (line and function) Which roles we need Which skills we need How we build and sustain capability
Culture	Why we exist What we value How we work together How we communicate
Process	What we do How we do it How we learn How we continuously improve
Technology	Which tools we use How we use them How we support people to perform their role
Governance	How we manage risk How we make decisions How we ensure safety, quality and technical integrity

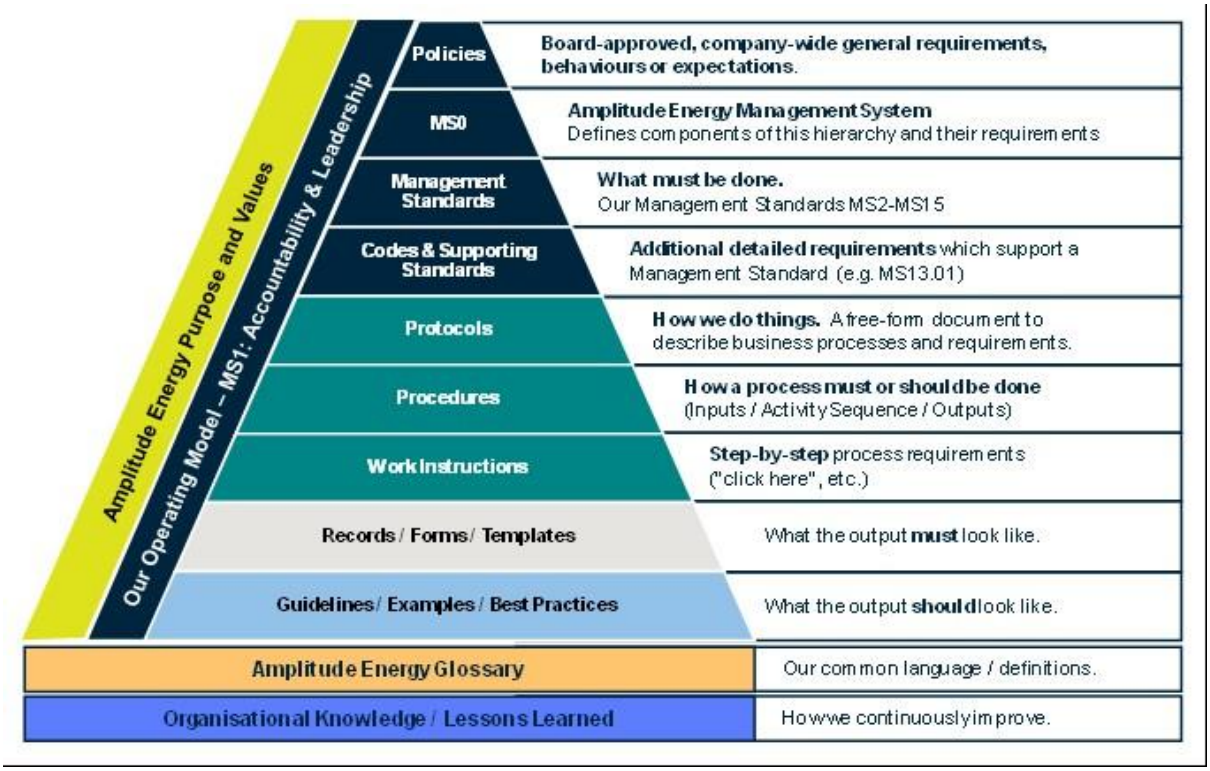


Figure 12-1: AEMS Document Hierarchy

Table 12-2: CEMS Standards

AEMS Standard	Focus Area
MS00	Statement of Intent and Expectations
MS01	Accountability and Leadership
MS02	People Management
MS03	Risk Management
MS04	Strategy and Planning Management
MS05	External Affairs, Investor Relations, Community and Stakeholder Management
MS06	Information Systems
MS07	Operations Management
MS08	Technical Management
MS09	Health, Safety and Environment Management
MS10	Incident and Crisis Management
MS11	Supply Chain and Procurement Management
MS12	Technical Assurance and Compliance Management
MS13	Financial Management
MS14	Commercial Marketing and Economics Management
MS15	Asset Lifecycle Management

Health, Safety and Environment Policy

AEMS | Health & Safety | Policy

This policy describes our approach to managing Health, Safety and Environmental risks at Amplitude Energy

Our Commitment

Amplitude Energy is committed to taking all reasonably practicable steps to protect the health and safety of our workers, contractors, partners, and the communities in the areas where we operate.

In addition, we will ensure our business is conducted in an environmentally responsible manner.

Our Actions

We will:

- **Integrate** health, safety and environmental requirements into our daily work, our business planning and our decision making
- **Comply** with all relevant health, safety and environmental laws and regulations
- **Provide** resources and systems to enable delivery of our health, safety and environmental objectives
- **Identify, control and monitor** risks that have the potential to harm people and the environment to as low as reasonably practical
- **Empower** our people, regardless of position, to "Stop the Job" if they consider it necessary to prevent harm to themselves, others or the environment
- **Consult, communicate and promote participation** of our workforce to build and maintain a strong health, safety and environment culture
- **Ensure** all employees and contractors are trained, competent and suitably supervised so that works are undertaken in a safe and environmentally responsible manner
- **Collaborate** proactively with our stakeholders and the communities where we operate
- **Investigate and learn** from our incidents and from those in our industry
- **Set, measure and monitor** health, safety and environmental targets to drive continuous improvement in our performance
- **Report** publicly and transparently on our health, safety and environmental performance

Governance

The HSE Improvement Forum has oversight of this policy. The Managing Director is accountable for communicating this Policy and for ensuring compliance with its undertakings. All Executive Leadership Team members and Managers shall ensure the effective implementation, management and monitoring of our HSE Management System and its subsequent outcomes.

All Staff are responsible for compliance with our policy, standards, and procedures.

This policy will be reviewed at appropriate intervals and revised as necessary to keep it current.

Policy authorised by

Jane Norman
Managing Director & CEO
Date: 11 February 2025 Review Date: 13 July 2026

Figure 12-2: Amplitude Energy's Health, Safety and Environment Policy

12.2 Asset Integrity Management

The integrity of all Amplitude Energy Assets is managed in line with MS08: Technical Management. Well integrity is planned and assured through adhering to the requirements of the Well Integrity Management Protocol. These requirements inform the development of a Well Operations Management Plan (WOMP).

An accepted WOMP is required for the entire well life cycle and must be in place before drilling can commence. The WOMP describes the well integrity management, controls, verification, and maintenance for well activities. Well integrity is demonstrated through the maintenance of a primary and a secondary well barrier envelope. The WOMP details the well barrier elements and performance standards and their implementation through the well life cycle.

Amplitude Energy manages the integrity of the well through every phase of the well construction cycle. The overall strategy of the integrity management plan is to maintain the assets as close to their design condition as possible. Accordingly, the integrity of the well is maintained and monitored in several ways throughout their life cycle, until the well is plugged and abandoned. The integrity management elements include:

- design, pressure containment and primary protection functions:
  - design basis and documentation
  - protection and support structures
  - corrosion protection system
  - restriction and safety zone systems
  - intervention procedures
  - well integrity reviews.
- monitoring and inspection:
  - marine activity monitoring
  - weather (exceedance) monitoring
  - ROV visual and CP inspection
  - relevant persons engagement (facility awareness).

12.3 Activity Planning

The development and ongoing management of offshore facilities is planned and executed in accordance with MS15: Asset Lifecycle Management. Amplitude Energy uses a gated process; the process workflow is divided into phases (Figure 12-3). Each phase is subject to assurance processes and a gate review, the outcomes of which include continue, stop, hold, or recycle.

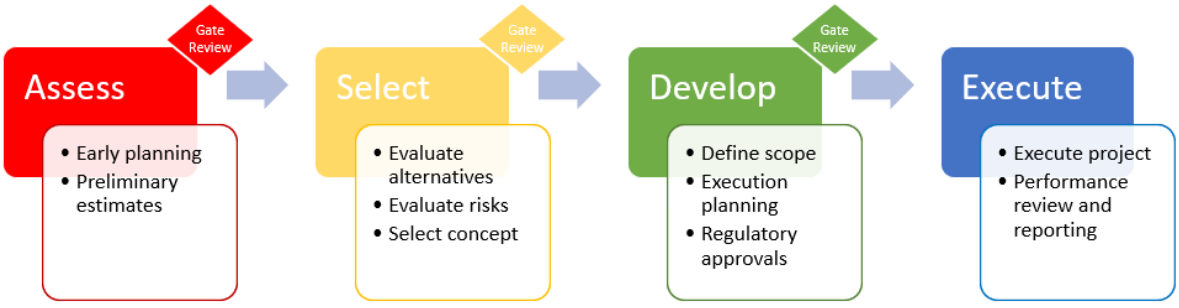


Figure 12-3: Activity Workflow

12.3.1 Decommissioning Planning

Decommissioning of an asset involves well plugging, deconstruction and removal (base case) in a safe and environmentally responsible manner, processing of materials, reagents, waste and infrastructure associated with the operations, and rehabilitation of the area.

The well covered by this EP has been assessed as having the potential to be utilised for future evaluation, appraisal, or development. The well will be completed, temporarily suspended following drilling, and monitored as per the activities in Section 3.4 prior to any future tie-in and development activities.

In this event, well decommissioning activities, also referred to as well plug and abandonment (P&A) activities, will be covered by a future EP that is submitted prior the term of EP has ended. P&A activities have only been included within this EP as a contingency case, in the unlikely event that the well is not used for future production. In this event the well will be P&A'd within the term of this EP and conducted as per Section 3.4.6.

Section 572(3) of the OPGGS Act requires titleholders to remove all equipment and other property in their title area that is neither used, nor to be used, in connection with operations. This obligation is ongoing and covers both the removal of equipment and property at the end of production and the removal of disused infrastructure at appropriate points throughout the life of an asset.

Amplitude Energy's Decommissioning Protocol acknowledges legislative requirements and illustrates the company's management system for integrating decommissioning planning across operations. The Protocol outlines roles and responsibilities, along with requirements for decommissioning planning for onshore and offshore assets and associated financial provisions.

The objectives of this protocol are to:

- Define the requirement for decommissioning as part of the lifecycle of assets.
- Define the requirement for a decommissioning plan to be developed and maintained for each asset, or group of assets within an operational area. The decommissioning plan must consider, where practical, progressive decommissioning of assets when equipment is not intended to be returned to operation
- Define the requirements for financial provisions to ensure decommissioning is completed in accordance with the decommissioning plan and that appropriate provisions are allocated for non-operated assets.

Options for other than the complete removal of all property may be considered, in which case the decommissioning plan must demonstrate that the alternative delivers equal or better environmental outcomes compared to complete removal, and that the approach complies with all other legislative and regulatory requirements. Therefore, for the purposes of planning, full removal must be the base case until an alternative end-state is accepted by the regulator.

Where onshore treatment and disposal of wastes is to be undertaken as a component of decommissioning, management of this waste must be in accordance with the respective legislation of the States or Territory. Depending on the remaining operational life, this may require specific plans for:

- waste management
- Licensing and regulation of waste transport, storage, treatment, resource recovery and disposal.

12.4 Contractor Management

The Supply Chain and Procurement Management Standard details Amplitude Energy's contractor management system, which provides a systematic approach for the selection and management of contractors to ensure any third party has the appropriate safety and environment management system and structures in place to achieve HSEC performance in accordance with Amplitude Energy's expectations.

This standard applies to sub-contractors, Third Party Contractors (TPCs) and suppliers conducting work at Amplitude Energy sites or providing services to Amplitude Energy. The Standard addresses operational HSEC performance of all contractors while working under an Amplitude Energy contract or in an area of Amplitude Energy responsibility or which may be covered under the HSEC Management System. The key HSEC steps include:

- Planning – HSEC assessment of potential contractors, suppliers and / or TPCs.
- Selection – submission and review of contractors and/or TPCs HSEC management data.
- Implementation – onsite contractors and/or TPCs HSEC requirements including induction and training requirements.
- Monitoring, review and closeout – ongoing review of contractors and/or TPCs HSEC performance including evaluation at work handover.
- Prior to Contractor commencement of operations, contractors must have in place a Amplitude Energy approved HSE Management System that meets minimal regulatory requirements and ensures compliance with this EP.

Amplitude Energy will undertake an on-hire inspection of the relevant vessel against EP requirements. Amplitude Energy shall also provide primary contractors with this EP and EP commitments register, inclusive of the EPOs and EPSs established in this plan. This is one of a number of means to ensure contractors are aware of, and comply with, EP requirements. Also see Section 12.6

12.5 Organisational Structure, Roles and Responsibilities

As required by Section 22(3) of the OPGGS(E)R this section outlines the chain of command (Figure 12-4) and roles and responsibilities (Table 12-3) of employees and contractors in relation to the implementation, management and review of this EP.

The emergency response structure for the activity is detailed in the Offshore Victoria OPEP (VIC-ER-ERP-0001).

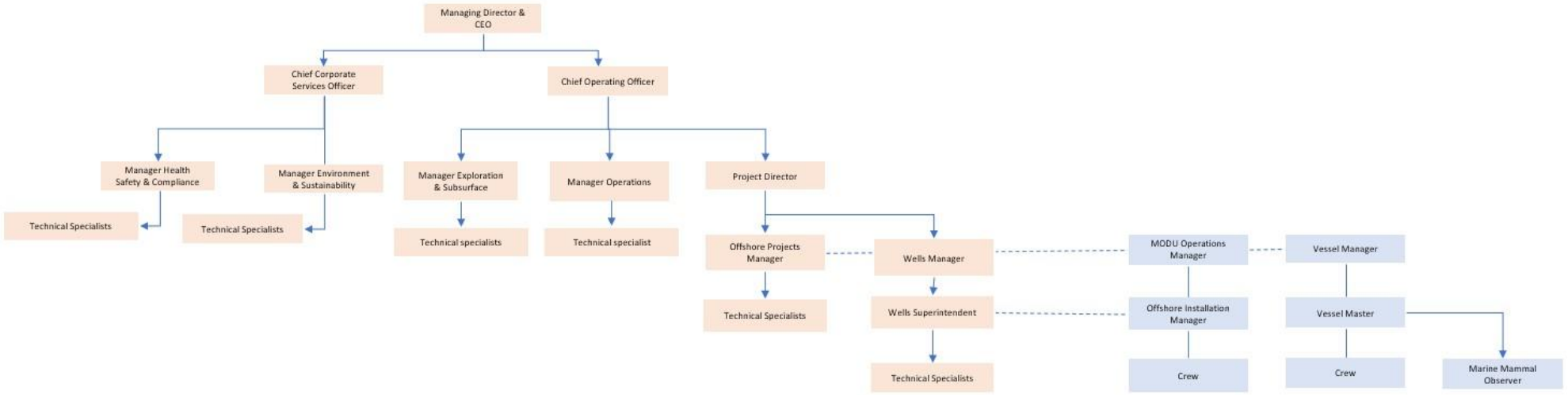


Figure 12-4: Amplitude Energy Offshore Operational Organisational Structure

Table 12-3: Amplitude Energy Environmental Roles and Responsibilities

Role	Responsibilities
Amplitude Energy	
Managing Director & CEO	The Managing Director & CEO is accountable for ensuring a framework has been established through which the Management System requirements will be met.
Chief Operating Officer	Ensures: • Compliance with the Amplitude Energy HSEC Policy and Management System. • Audits and inspections to verify HSEC and integrity performance are scheduled and undertaken. • Adequate resources are in place to meet the requirements within the EP and OPEP. • Adequate emergency response capability is in place. • Incidents and non-conformances are recorded, reported and investigated.
Chief Corporate Services Officer	Ensures: • Amplitude Energy's Emergency Response preparedness is appropriate for the risks posed by the activity. • Emergency Response Training, Competency and Testing is commensurate to the risks associated with the current offshore activity.
Manager Environment & Sustainability	Ensures: • Environmental (including decommissioning) regulatory requirements are embedded within the Amplitude Energy Management System. • Compliance with relevant statutory and Amplitude Energy Management System requirements. • Specialist environment input and support is provided to implement the EP during the activity, Management and Board as required. • Identify and communicate relevant environmental legislative requirements, performance outcomes, control measures, performance standards, measurement criteria and requirements in the implementation strategy in this EP and OPEP to the activities. • Develop the environmental component of inductions. • Environmental incidents are investigated in accordance with Amplitude Energy requirements and learnings are disseminated appropriately. • An in-depth and up to date knowledge of the legal and statutory Environmental obligations for is maintained. • Environmental performance is monitored, evaluated and reported as appropriate at all levels in the organisation. • Review of environmental monitoring records to ensure compliance with the requirements (EPOs, EPS's and processes described in Section 11.0 of the EP. • Assess environmentally relevant changes as per the MOC process. • Review any non-conformances relevant to environment performance to ensure corrective actions are appropriate to prevent recurrence. • Prepare and submit environmental incident reports and performance reports to regulators.
Manager Health Safety & Compliance	Coordinates: • Amplitude Energy's approach to Emergency Response and Preparedness. • Emergency Response Training.

Role	Responsibilities
	• Competency and testing commensurate to the risks associated with the current offshore activity. • Maintain and test oil spill response arrangements.
Project Director	Ensures: • Compliance with the Amplitude Energy HSEC Policy and Management System components applicable to the Activity. • Compliance with relevant statutory and Amplitude Energy Management System requirements. • Provides resources for management for Activity execution • Promotes a high level of HSE performance and drives improvement opportunities
Activities Manager / Well Manager / Manager Exploration & Subsurface	Ensures in relation to respective area of responsibility (Exploration, Drilling, Operations): • Compliance with the Amplitude Energy HSEC Policy and Management System components applicable to the Activity. • Compliance with this EP and controls implemented. • Contractor prequalification and qualification processes are undertaken. • Personnel are inducted with EP requirements and are aware of their environmental responsibilities. • Response arrangements in the OPEP are in place and tested commensurate to the risks associated with the current offshore activity. • Environmentally relevant changes are assessed and approved by Amplitude Energy. • Environmental incidents are reported internally and externally, and investigations undertaken. • Inspections and audits undertaken. • Actions from environmental audits and incidents are tracked to completion. • Relevant persons engagement is undertaken. • Review any non-conformances relevant to environment performance to ensure corrective actions are appropriate to prevent recurrence. • Well integrity management plans are developed, maintained and implemented • Provides technical capability to support the development and review of decommissioning plans for the well.
Wells Superintendent	Ensures: • Roles and Responsibilities are communicated to offshore personnel. • Compliance with EP commitments (EPOs/EPSs) for the offshore activity. • Implementation of risk assessment processes and management of change for the offshore activity. • Environmentally relevant changes are assessed and approved by Amplitude Energy. • Appropriate source control resources are available and maintained, relevant to the activity. • Relevant plans are implemented.
Contractors	
MODU Operations Manager / Vessel Manager	Ensures in relation to respective area of responsibility: • Compliance with the Amplitude Energy HSEC Policy. • Compliance with this EP and controls are implemented.

Role	Responsibilities
	• Support implementation of whale disturbance risk management measures described in this EP. • Personnel are inducted with EP requirements and are aware of their environmental responsibilities. • Response arrangements in the OPEP are in place and tested. • Environmentally relevant changes are assessed and approved by Amplitude Energy. • Environmental incidents are reported internally and externally, and investigations undertaken. • Inspections and audits undertaken. • Actions from environmental audits and incidents are tracked to completion.
Offshore Installation Manager	Ensures: • Compliance with relevant environmental legislative requirements, performance outcomes, control measures, performance standards, measurement criteria and requirements in the implementation strategy in this EP. • Inductions are completed, and record of attendance maintained. • Chemicals that have the potential to be discharged to the marine environment are assessed and approved using the Amplitude Energy's Offshore Chemical Assessment Procedure. • Environmentally relevant changes are assessed and approved by Amplitude Energy • Incidents are reported to the Amplitude Energy Project Manager. • Monitoring and other records are collated and provided to the Amplitude Energy Project Manager on completion of the program. • HSEC inspections are undertaken throughout the offshore activity to ensure ongoing compliance with the EP requirements. • Corrective actions identified from incidents or inspections are implemented.
Vessel Master	Ensure compliance with relevant environmental legislative requirements, performance outcomes, control measures, performance standards, measurement criteria and requirements in the implementation strategy in this EP where relevant to their role.
Marine Mammal Observer	• Support implementation of whale disturbance risk management measures described in this EP. • Observe for Marine Mammals in accordance with EP requirements. • Record and report all marine mammal sighting events.
Offshore Crews	Ensure compliance with relevant environmental legislative requirements, performance outcomes, control measures, performance standards, measurement criteria and requirements in the implementation strategy in this EP where relevant to their role.

12.6 Training and Awareness

OPGGS(E)R Section 22(4) requires that the implementation strategy detail measures to ensure each employee or contractor working on, or in connection with, the activity is aware of their responsibilities in relation to this EP, including during emergencies or potential emergencies.

12.6.1 Amplitude Energy Personnel

Amplitude Energy personnel competency and training requirements are outlined in position descriptions and reviewed during the recruitment process. Competencies and training are initiated as defined in the Training and Development Procedure.

Personnel training records are maintained internally in accordance with MS06 Information and Systems Management.

12.6.2 Contractor Personnel

Contractors engaged to work on the activity are assessed and engaged in accordance with the requirements of the MS11 Supply Chain and Procurement Management.

Competency of contractors is assessed as part of the pre-qualification and qualification process and requires contractors to define the competency and training requirements necessary to ensure that contractor personnel have the relevant knowledge and skills relevant to their role.

12.6.3 Environmental Induction

Amplitude Energy and contractor personnel who work on the activity will complete an induction.

The environmental component of the induction will include information as detailed in Table 12-4. Records of personnel that complete the induction will be maintained internally in accordance with MS06 Information and Systems Management.

Table 12-4: Environmental Components to be included in Environmental Inductions

Component	Offshore	Onshore
	Vessel / MODU	Activity Management
Description of the environmental sensitivities and conservation values of the operations area and surrounding waters. Information on the cultural links with elements of the environment that may be observed in the operational area, including whales.	✓	✓
Controls to be implemented to ensure impacts and risks are ALARP and of an acceptable level.	✓	✓
Requirement to follow procedures and use risk assessments/job hazard assessments to identify environmental impacts and risks and appropriate controls.	✓	✓
Procedures for responding to and reporting environmental hazards or incidents.	✓	✓
Overview of emergency response and spill management procedures.	✓	✓
Megafauna sighting and vessel interaction procedures.	✓	X

12.7 Emergency Response

12.7.1 General Response

Amplitude Energy manages emergencies from offshore Victoria activities in accordance with its Incident Management Plan (IMP). The purpose of the IMP is to provide the Amplitude Energy

Incident Management Team (IMT) with the necessary information to respond to an emergency affecting operations or business interruptions. The IMP:

- Describes the Emergency Management Process.
- Details the response process.
- Lists the roles and responsibilities for the IMT members.
- Includes a communications management instructions outlining the types of communications which should occur and by whom within Amplitude Energy. Amplitude Energy maintains an Emergency Contacts Directory which lists Stakeholders relevant to different types of incidents.

12.7.2 Oil Pollution Emergency Plan

In accordance with Commonwealth OPGGS(E)R Section 22(8) and (9), the implementation strategy must include an OPEP/Emergency Response Plan (ERP) and arrangements for testing the response arrangements within these plans.

The Amplitude Energy Offshore Victoria OPEP and Offshore Victoria Operational and Scientific Monitoring Plan (OSMP) provide for oil spill response and monitoring arrangements for this activity. These documents are submitted with this EP.

Roles and responsibilities for maintaining oil spill response capability and preparedness, testing and review arrangements and oil spill response competency and training requirements are detailed in the OPEP. The OPEP also includes Section 2.4 outlining Notification and Ongoing Consultation requirements in the event of a spill requiring OPEP activation.

Vessels will operate under the vessel's SMPEP (or equivalent appropriate to class) or spill clean-up procedures to ensure timely response and effective management of any vessel-sourced oil spills to the marine environment. The SMPEP (or equivalent) is routinely tested. The SMPEP (or equivalent) is designed to ensure a rapid and appropriate response to any vessel oil spill and provides guidance on practical information that is required to undertake a rapid and effective response, and reporting procedures in the event of a spill.

12.7.3 Source Control Emergency Plan

A Source Control Emergency Response Plan (SCERP) is developed for offshore well activities in the unlikely event of a loss of containment from a well. The SCERP aligns with industry and regulatory guidelines and provides for each of the key source control response strategies outlined in this EP.

Roles and responsibilities for maintaining source control response capability and preparedness, testing and review arrangements and source control response competency and training requirements are detailed in the SCERP and summarised in Table 12-5.

Table 12-5: SCERP Content

Response Options	Topics Addressed
Site Survey Debris Removal Intervention Pressure Control Equipment Capping Subsea Dispersant (if Applicable)	• Arrangements for the provision of the Source Control IMT personnel (numbers, competency, capability for the duration of the response). • Arrangements for the provision of equipment and material supplies. • Arrangements for equipment and personnel monitoring and tracking. • Activation and mobilisation plans, including activation and expenditure authority and regulatory approval processes.

Response Options	Topics Addressed
Relief Well Drilling	• Logistics plans and providers. • SIMOPS planning process. • Deployment and installation plans. • Well kill and shut-in plans.

12.8 Chemical Assessment and Selection

Amplitude Energy's Offshore Chemical Assessment Procedure requires that all relevant chemicals planned for use offshore for a project and operations that will be or have the potential to be discharged to the environment are assessed and approved prior to use. This process is used to ensure:

- All relevant chemicals are assessed in accordance with the process
- All assessments are logged and made available on the Offshore Environment Chemical Environment Assessment (OECEA) database
- The OECEA is reviewed on an annual basis to ensure compliance with active Environment Plans (EPs) and ongoing activities.
- The acceptance or rejection of chemicals that require ALARP justification is elevated to the relevant Amplitude Energy Project Manager and/or senior technical representative.
- If there is no Offshore Chemical Notification Scheme (OCNS) or Eco-toxicity data available, and environmental assessment of the chemical is not possible, the discharge of the product offshore will not be approved.

The evaluation process uses a series of steps to assess chemicals by first screening chemicals against public databases. Where necessitated by the screening, such as where public data shows a chemical to have toxicity, bioaccumulation or biodegradation outside of defined thresholds, an ALARP justification is completed. This ALARP justification includes consideration of alternatives, and a detailed technical justification is required to approve the chemical. The ALARP Justification must be approved by the Project Manager. Where technical justification for the chemical cannot be provided, the chemical is not accepted for use.

A summary of the evaluation process is detailed in Table 12-6.

Table 12-6: Amplitude Energy Offshore Chemical Assessment Procedure Steps to Propose a New Chemical

Step	Evaluation	Input	Outcomes
1	Characterise proposed chemical.	Confirm the following: • chemical name & supplier • chemical Function/purpose • formulation, where available • CAS number, where available • eco toxicity, where available • estimated use, dosage and discharge.	Proceed to **Step 2**.
2	Identify sensitive factors	Chemical assessment is only required for chemicals which are to be discharged to the marine environment. If a chemical is	Where chemical is to be used in an entirely closed loop system no further action is required.

Step	Evaluation	Input	Outcomes
		used within a closed system or will remain downhole or stored onboard the MODU/vessel, the chemical can be accepted as 'Zero Discharge'. Refer to EP to determine proximity to priority sensitivities. Sensitive factors may include: • Species endemicity/ uniqueness • Species diversity • Biological productivity including benthic primary productivity, and • The social/cultural value of an area.	Where chemical is to be discharged - proceed to **Step 3**.
3	Decision: Check PLONOR List.	Refer to OSPAR PLONOR List.	Where the chemical is listed the chemical is approved at **Step 3**. Where the chemical Is not listed go to **Step 4**.
4	Decision: Check OCNS Definitive Ranked Lists of Registered Substances.	Search the OCNS Definitive Ranked Lists of Registered Substances for the product name or equivalent branding.	Is the chemical is listed on the OCNS Definitive Ranked List? If yes go to **Step5**. Where the chemical is not listed go to **Step 6.**
5	Determine the OCNS Hazard Quotient	Use the OCNS Definitive Ranked Lists of Registered Substances to determine the Risk Banding. Where applicable use the Chemical Hazard Assessment and Risk Management calculator (CHARM) to rank the chemical.	No further action is needed for chemicals with a HQ band Gold, Silver, or OCNS grouped E or D, with no product or SUB warnings.
			Where chemicals have a HQ colour banded white, blue, orange or purple, or OCNS grouped C, B or A go to **step 8**
6	Determine OCNS Substitution or Product Warning.	Use OCNS Definitive Ranked Lists of Registered Substances or obtain from the current CEFAS template. Always use the latest version.	Where the chemical does not have a product or substitution warning no further action is required and chemical is approved.
			Where the chemical has a product or substitution warning reasonable effort should be made to seek an alternative replacement. go to **Step 7**.
7	Consider an alternative or complete ALARP justification.	Chemical assessor and chemical requestor work together to seek alternative. If no alternatives are available (based on technical requirements, HSE risk and chemical availability) technical justification	Where there is no technical justification for the chemical it is not accepted for use. Where there is a technical justification an ALARP Justification must be

Step	Evaluation	Input	Outcomes
		is required to proceed with selected chemical.	approved by the Project Manager.

Where a chemical is not included on the OCNS Definitive Ranked List, an Eco-toxicity assessment is undertaken. If the use is short term use (< 6 months) and no eco toxicity data for the exact chemical (product) is available, eco-toxicity data from a chemically similar product may be accepted for assessment.

12.9 Invasive Marine Species Risk Assessment

Amplitude Energy's Invasive Marine Species Risk Management Process (CMS-EN-PRO-0002) was developed to:

- Integrate Australian IMS management requirements into Amplitude Energy's offshore operations.
- Prevent the introduction, establishment or spread of a known or potential invasive marine species (attributable to Amplitude Energy activities) within Australian waters.
- Ensure appropriate reporting in the event of identification of a marine pest, to enable a response in accordance with the Australian Marine Pest Emergency Plan.

The procedure details the actions to be undertaken during the contracting phase for a vessel, MOU and submersible equipment (e.g. ROVs) for an Activity within an Amplitude Energy operational area (as defined under the EP for the activity). The procedure incorporates key considerations from IMO Biofouling Guidelines (IMO, 2023), Australian Government (2009) biofouling guidelines, and Australian Biofouling Management Requirements (DAFF, 2023); the inputs, decision points and general flow of the of IMS risk management actions are shown in Figure 12-5.

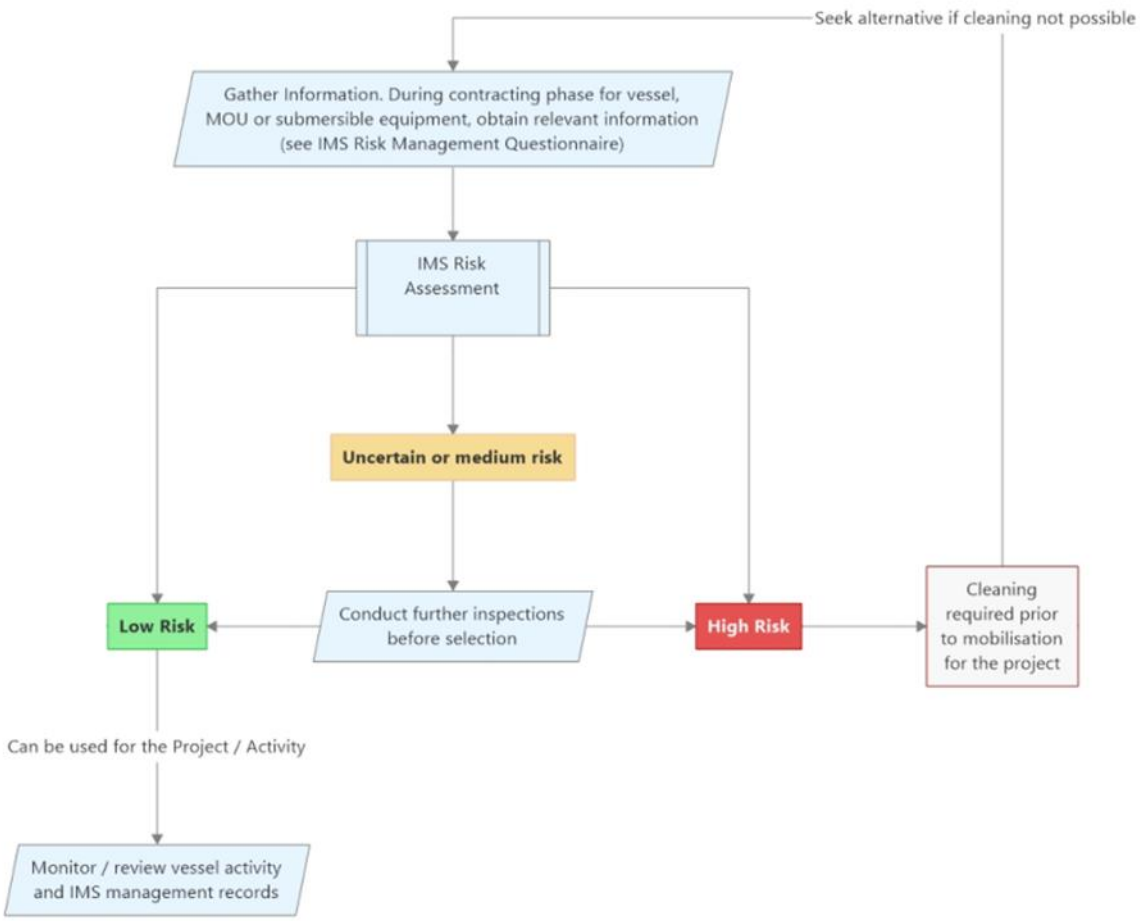


Figure 12-5: Amplitude Energy IMS Risk Management Flow

12.10 Marine Mammal Risk Review and Management

Amplitude Energy implements risk reviews prior to undertaking offshore activities.

The Offshore Victoria Whale Disturbance Risk Management Procedure is designed to reduce impacts and risks to as low as reasonably practicable, and to acceptable levels. The procedure specifically deals with risks of physical interaction (vessel strike), and behavioural disturbances (because of subsea noise) to whales, and other marine mammals. Focus is given to the two Endangered Whale Species (EWS) which undertake important behaviours within both the Otway and the Gippsland Regions.

The procedure communicates how whale interaction and disturbance risks are to be managed by offshore project teams, and crews on offshore vessels involved in offshore projects, in both the Otway and Gippsland regions. The procedure is informed by the respective offshore activity EPs, relevant government guidelines and species conservation management plans. The risk review framework addressing campaign timing in relation to seasonal sensitivities (pygmy blue whale and southern right whale important behaviours) is shown in Figure 12-6.

Figure 12-7 illustrates the monitoring network that will be implemented for the Activity, and Figure 12-8 shows the process that will be followed by the MMOs, MODU and vessels operating on the Activity, as described in Section 6.6 and CM17.

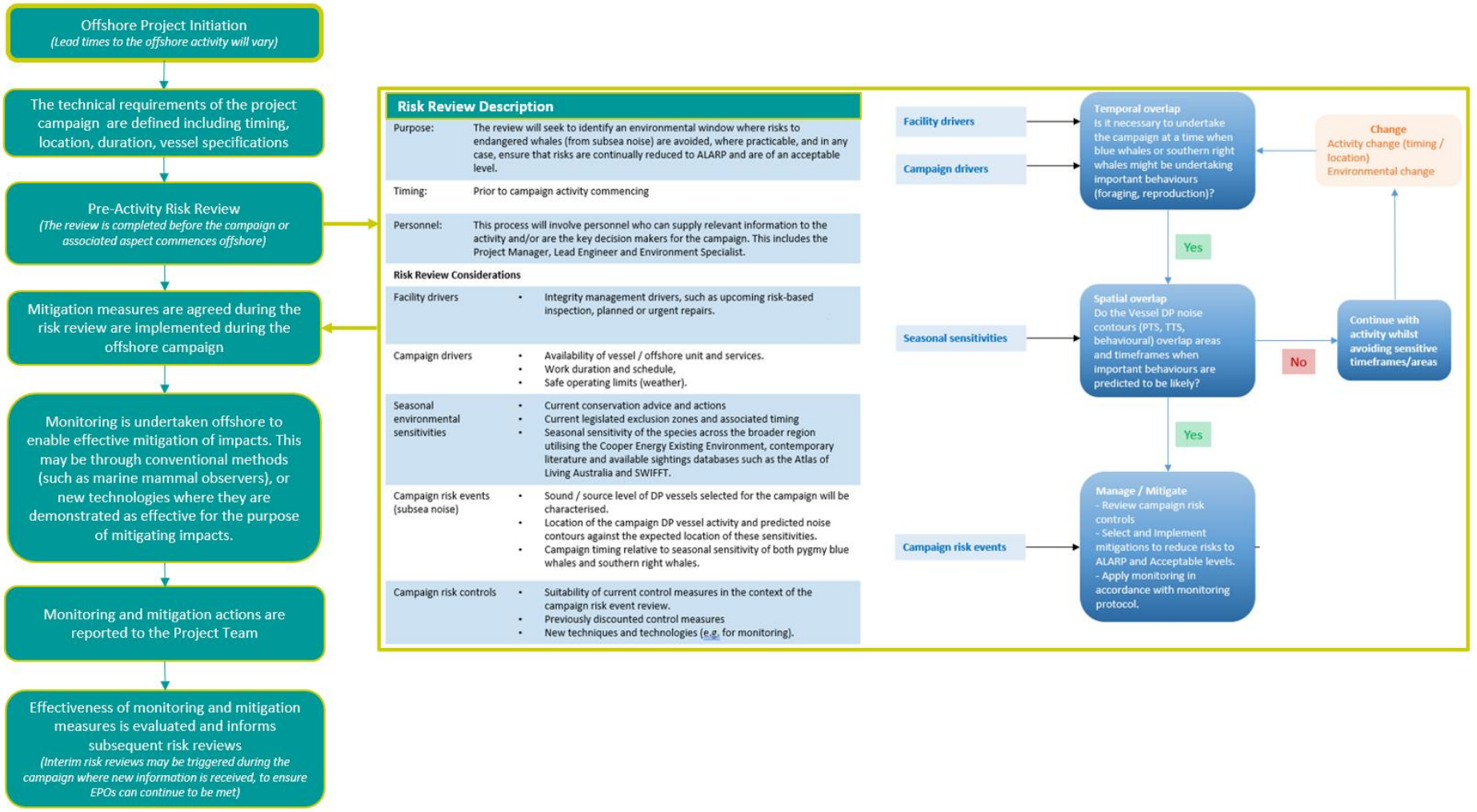
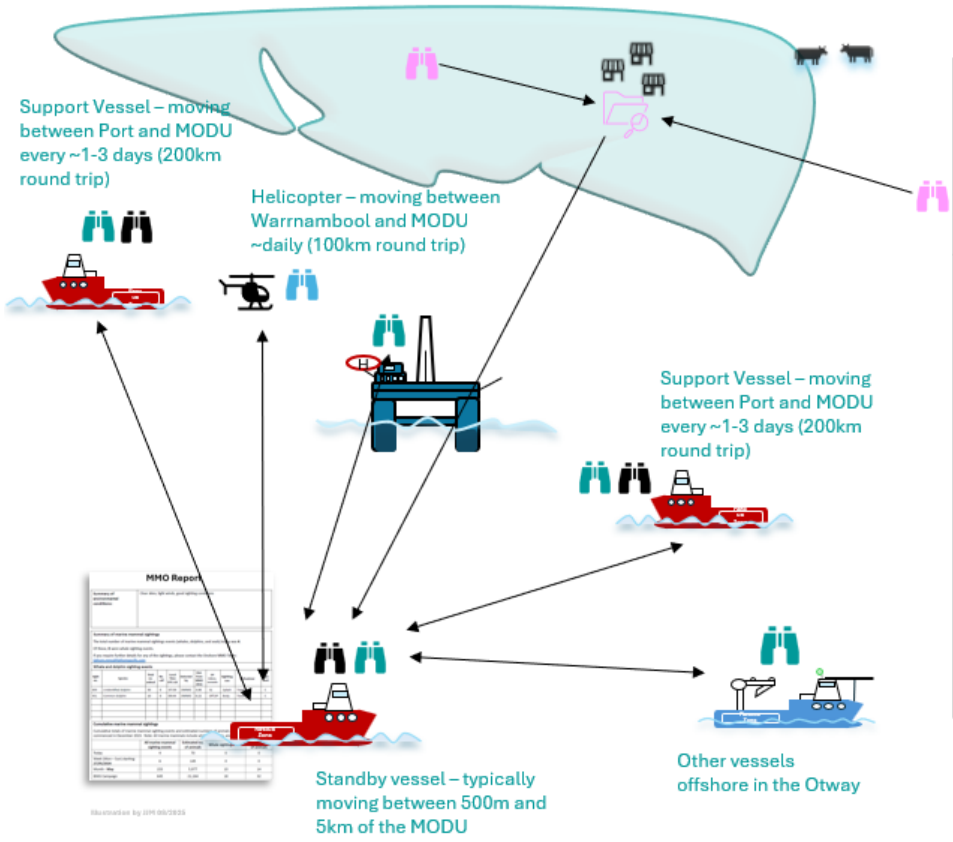


Figure 12-6: Campaign Risk Review Framework



Key	Observers	Platform	Effort	Field of view	Effectiveness for project mitigation
	Dedicated MMOs Officers of the Watch	Support Vessel 1, 2 and 3	12+ hours dedicated and opportunistic	Large	High Moderate
	Officers of the Watch	MODU	12+ hours opportunistic	Moderate	Moderate
	Crew	Helicopter	~30 minutes daily opportunistic	Large *Limited observation window*	Low
	Officers of the Watch	Other Operators	Assume opportunistic *Likely dedicated if operating under OPGGS*	Large	Low
	Citizen Scientists	Citizen Science	Opportunistic	Broad coastal	Low

**effectiveness of different monitoring platforms is based on experience from MMO program offshore Victoria across 2023 - 2024 which recorded > 1100 observations, including >300 toothed and baleen whale observations over an ~18-month period (Kennedy et al. 2024). Effectiveness for project mitigation also considers BMG Offshore Aerial survey report (2023) and DECCEW 2024 survey guidelines in the context of weather conditions offshore Otway.*

Figure 12-7: Marine Mammal Monitoring Network

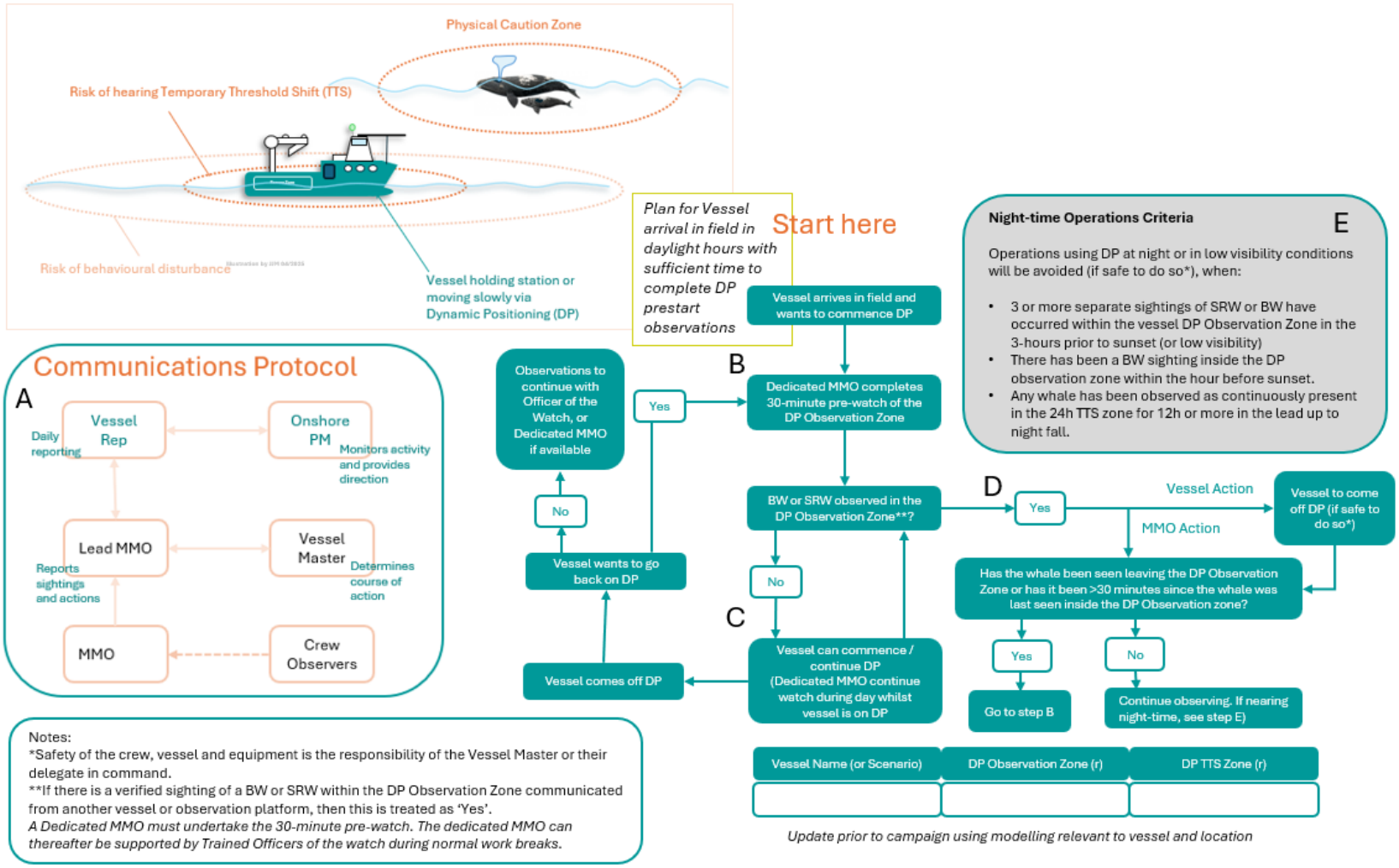


Figure 12-8: Marine Mammal Monitoring and Action Flow Chart

12.11 Inventory Management

Following the completion of well construction activities, residual bulks (barite, bentonite and cement) will be managed in accordance with Figure 12-9. Amplitude Energy's preference will be to transfer unused bulk products to the next client utilising the MODU, however if this is not possible an unused bulks management process (Figure 12-9) has been developed to allow for consideration of management options.

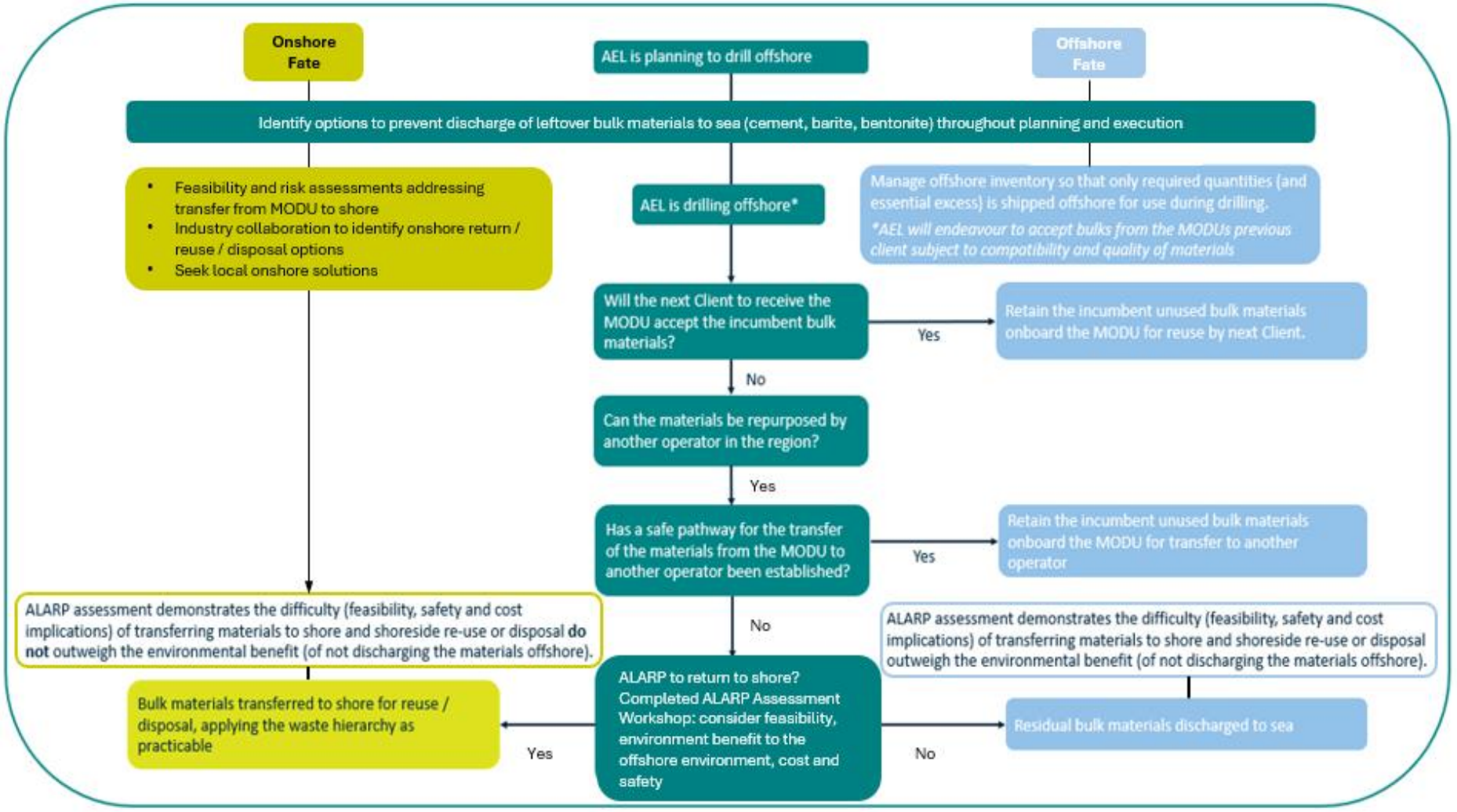


Figure 12-9: Process for Management of Residual Bulk Materials

12.12 Ongoing Consultation – Regulation 22(15)

Ongoing consultation is that which occurs following the final submission of the environment plan to NOPSEMA prior to acceptance and during the implementation phase. Ongoing consultation supports the following:

- Implementation of commitments made during consultation such as:
  - Notifications of milestones as agreed.
  - Follow ups that may be agreed (e.g. commitments to data sharing).
  - Consultation in preparation of emergency events that ensures emergency preparedness is maintained.
- Consultation with newly identified relevant persons to:
  - Capture new comments or concerns.
  - Assess if significant new impacts or risks arise, or any opportunity for continuous improvement.
  - Provide feedback on assessment of issues or concerns raised, and any resultant improvements made to the EP.
- Consultation with existing relevant persons to:
  - Consider any changes to impacts or risks where that change might affect those relevant persons' functions, interest or activities.
  - Assess the merits of any objection or claim raised about those changes.
  - Respond to each objection or claim.
  - Incorporate any new measures to be adopted as a result of this consultation via MOC process outlined in this EP.

To support ongoing consultation, Amplitude Energy will monitor for new relevant persons and maintain the Annie-2 EP stakeholder notifications register noting triggers for any agreed notifications or follow ups.

This consultation process has been developed considering the OPGGS(E)R, guidance and case law, and Amplitude Energy company values. However, consultation is a "real world" activity in a dynamic environment and grey areas may appear. Where this occurs, we will manage the change in accordance with our MOC process considering the above. Where unresolved, the objects of the OPGGS(E)R will further guide the MOC process.

12.13 Management of Change

MS08 Technical Management and Management of Change (MoC) General Protocol (CMS-TS-PRO-0002) describes the requirements for dealing with change management. The objective of the MoC process is to ensure that changes do not increase the risk of harm to people, assets or the environment; and to ensure impacts remain at an acceptable level. This includes:

- Deviation from established corporate processes.
- Changes to offshore operations and/or status of infrastructure.
- Deviation from specified safe working practice or work instructions/procedures.
- Implementation of new systems.
- Significant change of HSEC-critical personnel.

Environmentally relevant changes include:

- New activities, assets, equipment, processes or procedures proposed to be undertaken or implemented that have the potential to impact on the environment and have not been:
  - Assessed for environmental impact previously, in accordance with the relevant standard.
  - Authorised in the existing management plans, procedures, work instructions or maintenance plans.
- Proposed changes to activities, assets, equipment (including change of well or infrastructure status that may be undertaken under another EP), processes or procedures that have the potential to impact on the environment or interface with the environmental receptor.
- Changes to the existing environment including (but not limited to) fisheries, tourism and other commercial and recreational uses, and any changes to protective matter requirements, and information which may be shared by traditional owners (e.g., through consultation).
- Changes to the requirements of an existing external approval (e.g. changes to conditions of environmental licences).
- Changes, updates or environmental performance improvement identified from incident investigations, emergency response activities or emergency response exercises, and annual audits.
- Inclusion of any additional, or the improvement of, existing control measures to ensure avoidance of impacts to underwater cultural heritage values that are identified visually during offshore activities.

For any MoC with identified environmental impacts or risks, an impact/risk assessment will be undertaken to ensure that impacts and risks from the change can be managed to meet the nominated EPOs set out in the accepted EP as well as be ALARP and of an acceptable level.

Depending on the nature of the change, an MOC may be completed for a single change (e.g. associated with a discrete offshore campaign), or for a series of changes (e.g. following annual EP review and update). In either case, where an MOC is raised, the change(s) are evaluated against Regulatory criteria (Section 12.13.3) and the EP revised and/or resubmitted where required.

12.13.1 Identifying Change

Environmentally relevant changes will be identified via activity and baseline reviews, after action reviews and on an ad-hoc basis. Reviews will seek to identify both internal and external changes which might result in deviations from the impact and risk profiles provided for within the accepted EP. The reviews include a number of elements:

- Regular review of new and upcoming regulatory and policy change via access to weekly alerts coving changes across legislation and guidelines. This process also assists with the identification and evaluation of relevant government sustainability targets such as emissions reduction targets.
- Involvement with industry associations such as Australian Energy Producers (AEP) and Carbon Market Institute (CMI).
- Monthly review and reporting of recordable incidents; this includes investigation of incidents and may initiate the change assessment process depending on the nature of the incident.

- Review of seabed survey data to identify the presence of underwater cultural heritage receptors that may initiate the implementation of additional control measures to ensure the nominated EPOs set out in the accepted EP are met.

Annual EP audits (refer to Section 12.15.3) with findings and actions tracked to closure via Synergi.

Annual EP review and update; this process involves:

- Update of relevant legislation, integrating changes identified via the regular review process (if changes have not already triggered an interim update).
- Check of environmental baseline via review of publicly available government databases including PMST search application and UCH database.
- Inclusion of additional or updated environmental baseline relevant to the EP, from sources such as EPBC management plans, and data acquired from seabed surveys undertaken prior to well construction activities.
- Pre-activity reviews. During the planning phase for offshore vessel/MODU activities, the campaign components are reviewed in the context of the accepted EP to ensure the activities and associated impacts and are provided for.
- After-activity reviews or lessons learned reviews following offshore campaigns; these reviews provide a means to identify, share and act upon opportunities for improvement in relation to the management of impacts and risks.
- Engagement with relevant persons (refer to Section 11.0).

Environmentally relevant changes identified through these processes are recorded and tracked through to integration within relevant documents (e.g. plans, protocols etc.) and implementation within the business.

The regulatory requirement to revise and resubmit an EP is described in Section 12.13.3.

12.13.2 Changes to Titleholders and Nominated Liaison Person

Section 1.6 details the titleholders and nominated liaison person and contact details. Any change in these details is required to be notified to NOPSEMA as soon as possible.

12.13.3 Revisions to the EP

In the event that the proposed change introduces a significant new environmental impact or risk, results in a significant increase to an existing risk, or through a cumulative effect of a series of changes there is a significant increase in environmental impact or risk, this EP will be revised for re-submission to NOPSEMA in line with the MOC process described herein.

Where a change results in the EP being updated, the change/s are to be logged within the document revision description (Appendix 1 -).

In addition the titleholder is obligated to ensure that all specific activities, tasks or actions required to complete the activity are provided for in the EP. Section 39(1) of the OPGGS(E)R require that where there is a significant modification or new stage of the activity a proposed revision of the EP will be submitted to NOPSEMA.

In addition, a revised EP will be submitted in the circumstances outlined in Section 12.13.1.

12.14 Incident Reporting and Recording

Cooper Energy's Incident and Crisis Management Protocol and Incident Investigation and Reporting Protocol provide for a systematic method of incident reporting and investigation and a process for monitoring close out of preventative.

The incident reporting and investigation documentation defines the:

- Method to record, report, investigate and analyse accidents and incidents.
- Legal reporting requirements to the regulators within mandatory reporting timeframes.
- Process for escalating reports to Amplitude Energy senior management and the Amplitude Energy Board.
- Methodology for determining root cause.
- Responsible persons to undertake investigations.
- Classification and analysis of incidents.

Any complaints received from third parties relevant to the activities are managed in accordance with the Cooper Energy Incident Investigation and Reporting Protocol. If complaints are received, they are recorded in Cooper Energy's incident management system (Synergi) with appropriate corrective actions assigned. Where appropriate, feedback on corrective actions is also provided to the complainant. Where complaints may relate to fisheries, such as an equipment damage claim, this is managed in accordance with both Cooper Energy Incident Investigation and Reporting Protocol and the Fisheries Damages Protocol.

Notification and reporting requirements for environmental incidents to external agencies are listed in Table 12-7. Notification and reporting requirements for oil spills (Level 2/3) are detailed in the OPEP.

Table 12-7: External Incident Reporting Requirements

Incident Type	Description	Requirement	Timing	Contact
Recordable Incident	OPGGS(E)R: An incident arising from the activity that breaches an EPO or EPS in the EP that applies to the activity that is not a reportable incident.	As a minimum, the written monthly recordable report must include a description of: • All recordable incidents occurred during the calendar month. • All material facts and circumstances concerning the incidents that the operator knows or is able to reasonably find out. • Corrective actions taken to avoid or mitigate any adverse environmental impacts of the incident. • Corrective actions that have been taken, or maybe taken, to prevent a repeat of similar incidents occurring.	Before the 15th day of the following calendar month.	**Written Notification:** NOPSEMA - submissions@nopsema.gov.au
Reportable Incident	OPGGS(E)R: An incident arising from the activity that has caused, or has the potential to cause, moderate to significant environmental damage. For Amplitude Energy, reportable incidents include, but are not limited to, those that have been identified through the risk assessment process as having an inherent impact consequence Level 3, 4 or 5, or at a minimum, the following incidents:	Verbal Notification: 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 portable incident. • This must be followed by a written record of notification as soon as possible after notification.	Commonwealth Waters Within 2 hours of notification of the incident	**Verbal Notification:** NOPSEMA – Phone 1300 674 472 **Written Notification:** NOPSEMA - submissions@nopsema.gov.au NOPTA – reporting @nopta.gov.au
		Written Notification: Verbal notification of a reportable incident to the regulator must be followed by a written report. As a minimum, the written incident report will include: • The incident and all material facts and circumstances concerning the incident. • Actions taken to avoid or mitigate any adverse environmental impacts.	Commonwealth Waters Within 3 days of notification of the incident	**Written Notification:** NOPSEMA - submissions@nopsema.gov.au

Incident Type	Description	Requirement	Timing	Contact
	• A level 2/3 spill incident. • IMS Introduction.	• The corrective actions that have been taken, or may be taken, to prevent a recurrence of the incident. • The action that has been taken or is proposed to be taken to prevent a similar incident occurring in the future.		
		Written reports to be submitted to National Offshore Petroleum Titles Administrator (NOPTA) and DJSIR (for incidents in Commonwealth waters).	Within 7 days of written report submission to NOPSEMA	**Written Notification:** NOPTA – reporting@nopta.gov.au
Reportable incident - in the event an AMP may be exposed to hydrocarbons		Notification must be provided to the Director of National Parks and include: • titleholder details • time and location of the incident (including name of marine park likely to be affected) • proposed response arrangement • Confirmation of providing access to relevant monitoring and evaluation reports when available. • Contact details for the response coordinator.	As soon as possible	**Verbal Notification:** Marine Park Compliance Duty Officer – Phone 0419 293 465
Reportable Incident – Invasive Marine Species		Suspected or confirmed IMS Introduction.	Before the 15th day of the following calendar month.	**Written Notification:** NOPSEMA – submissions@nopsema.gov.au
			Immediate written notification (following phone call to NOPSEMA). Incident report* emailed within 3 days of the incident.	**Written Notification:** NOPTA: reporting @nopta.gov.au

Incident Type	Description	Requirement	Timing	Contact
			*Complete relevant sections of NOPSEMA incident reporting form FM0831.	
			As soon as possible	**Verbal Notification** **DAFF -** Phone 1800 900 090
Reportable Incident - Injury or Death to Fauna		Impacts to MNES, specifically injury to or death of EPBC Act-listed species. **https://www.environment.gov.au/biodiversity/threatened/listed-species-and-ecological-communities-notification**	Within 7 days	**Written Notification:** Email: EPBC.Permits@environment.gov.au
		Impact to cetacean/s in or beyond the Australian Whale Sanctuary resulting in death, injury or harassment. **https://www.dcceew.gov.au/environment/marine/marine-species/cetaceans/notification-interactions**	Within 7 days	DCCEEW Phone: 1800 920 528 Email: EPBC.Permits@environment.gov.au
		Vessel strike with cetacean.	Within 72 hours of incident.	DCCEEW – National Ship Strike Database **https://data.marinemammals.gov.au/report/shipstrike**

12.15 Environmental Performance Monitoring and Reporting

Amplitude Energy implements a range of measures aiming to ensure that for the duration of the activity:

- The environmental impacts and risks of the activity continue to be identified and reduced to a level that is ALARP and acceptable.
- Control measures detailed in the EP are effective in reducing the environmental impacts and risks of the activity to ALARP and an acceptable level.
- Emissions and discharges are monitored.
- Environmental performance outcomes and standards set out in the EP are being met.

These measures are integrated throughout this EP and key assurance processes are summarised in Table 12-8.

Table 12-8: Summary of Assurance Processes

Process	Frequency & Responsibility
Change management reviews	See Section 12.11
Tracking of Emissions and Discharges	See Section 12.15.1
Audit and Inspections	See Section 12.15.3
Management of non-conformance	See Section 12.11

12.15.1 Emissions and Discharges

Quantitative monitoring, record-keeping and reporting of emissions and discharges is undertaken for all activities within the scope of this EP. Emissions and discharge monitoring and records required for MODU and vessel-based activities are detailed in Table 12-9. These are used to validate inputs and assumptions to the impact assessments within the EP, ensuring impact profiles remain within defined acceptable levels. Copies of emission and discharge records will be retained in accordance with Section 12.16.

Record logs of vessel discharges are retained in accordance with MARPOL.

Table 12-9: Emissions and Discharge Monitoring

Aspect	Monitoring	Monitoring Frequency	Records
Site Surveying			
Project chemical discharges to marine environment	Chemical name Chemical type Chemical use Chemical volume	Weekly	Offshore Reports
Treated bilge	Volume Location Vessel Speed	As required	Oil Record Book
Food scraps	Volume Location	As required	Garbage Record Book
Sewage and greywater	Volume Location	As required	Maintenance Records

Aspect	Monitoring	Monitoring Frequency	Records
Spill	Volume Chemical / Oil type	As required	Daily Report
Fuel use	Volume	Daily	Incident Report
GHG Emissions	Volume (Fuel usage)	Daily	Daily Report
Well Construction			
Project chemical discharges to marine environment	Chemical name Chemical type Chemical use Chemical volume	Weekly	Offshore Reports
Drill Fluids Discharge	Fluid type Fluid volume % oil on cuttings	As required	Daily Report
Drill Cuttings Discharge	Cutting type Cutting volume	As required	Daily Report
Cementing discharges	Nature of discharge Volume Location	As required	Daily Report
Waste	Volume sent ashore	As required	Garbage Record Book or Waste Manifest
Spill	Volume Chemical / Oil type	As required	Daily Report
Fuel use	Volume	Incident Report	
GHG emissions	Volume (Fuel usage) Volume / Rate (Flaring)	Daily	Daily Report
Support Activities and Well Integrity Monitoring			
Project chemical discharges to marine environment	Chemical name Chemical type Chemical use Chemical volume	Weekly	Offshore Reports
Routine release of hydraulic fluid		As required	Offshore Reports
Treated bilge	Volume Location Vessel Speed	As required	Oil Record Book
Food scraps	Volume	Daily	Daily Report
Sewage and greywater	Volume Location	As required	Maintenance Records
Fuel use	Volume	Daily	Daily Report
Ballast water discharge	Volume Location	As required	Ballast Water Record System.
GHG Emissions	Volume (Fuel usage)	Daily	Daily Report

12.15.2 Activity Commencement and Cessation Notifications

Activity notification requirements are detailed in Section 11.0 (Consultation).

12.15.3 Annual Performance Report

As required by Section 51 (1) OPGGS(E)R, Amplitude Energy will submit an annual EP performance report to the regulator (NOPSEMA). This report will provide sufficient detail to enable the Regulator to determine whether the environmental performance outcomes and standards in the EP have been met.

The report will be submitted annually, by 31 December each year.

12.15.4 Fauna Reporting

Cetacean observation data will be submitted to the DCCEEW, within 3 months of the completion of an activity.

Observation data in relation to culturally significant species will be made available to First Nations Groups where requested.

12.15.5 Audit and Inspection

Environmental performance of offshore operations and activities will be audited and reviewed in several ways to ensure that:

- Environmental performance standards to achieve the EPOs are being implemented and reviewed.
- Potential non-compliances and opportunities for continuous improvement are identified.
- Environmental monitoring requirements are being met.

Non-conformance with the environmental performance standards outlined in this EP will be managed as per Section 12.15.6.

Opportunities for improvement or non-compliances noted will be communicated to relevant personnel at the time of the review/inspection/audit to ensure adequate time to implement corrective actions. The findings and recommendations of inspections or audits will be documented and distributed to relevant personnel for comment, and any actions tracked until completion.

12.15.5.1 EP Compliance

An annual audit will be conducted and used to inform the annual EP performance report (see section 12.15.3) submitted to NOPSEMA.

The Audit scope will include the performance outcomes and performance standards contained in the EP and the requirements detailed in the implementation strategy, to ensure that the environmental performance outcomes and environmental performance standards are being met.

Any environmentally relevant changes and opportunities to improve environmental performance will be assessed as described in Section 12.13 and incorporated into EP revisions as required.
Offshore Vessel and MODU Activities

The following arrangements review the environmental performance of offshore vessel and MODU activities:

- A premobilisation Marine Assurance inspection will be undertaken for offshore vessels and MODU to ensure they can meet the requirements of the EP and OPEP.
- An Activity-wide pre-start readiness review to ensure controls measures are in place, resourced and communicated to enable compliance.
- HSEC inspections will be undertaken throughout the offshore activity at least fortnightly to ensure ongoing compliance with relevant EP requirements. The scope of the inspections will include (but is not limited to) a range of marine and Activity assurance checks:
  - Spill readiness (i.e., provision spill kits and drills in accordance with vessel SOPEP/SMPEP).
  - Waste management in accordance with the EP, EPOs and EPSs.
  - Control measure performance for project activities occurring on the MODU and vessels.
  - Chemical Inventory checks to ensure campaign chemicals are accepted via the Offshore Chemical Assessment Procedure.
  - Maintenance checks for equipment identified within an EP EPS (e.g. oily water separator).

Non-compliance and improvement opportunities will be communicated to Amplitude Energy HSEC onshore for advice, tracking and reporting in accordance with Section 11.15.6.

12.15.6 Management of Non-Conformance

In response to any EP audit and inspection non-compliances, corrective actions will be implemented and tracked to completion as per the Incident Investigation and Reporting Protocol (CMS-ER-PRO-0001).

Corrective actions will specify the remedial action required to fix the breach and prevent its reoccurrence and is delegated to the person deemed most appropriate to fulfil the action. The action is closed out only when verified by the appropriate Manager and signed off. This process is maintained through the Amplitude Energy corrective action tracking system.

Where more immediacy is required, non-compliances will be communicated to relevant personnel and responded to as soon as possible. Where relevant the results of these actions will be communicated to the offshore crew during daily toolbox meetings or at daily or weekly HSEC meetings.

Amplitude Energy will carry forward any non-compliance items for consideration in future operations to assist with continuous improvement in environmental management controls and performance outcomes.

12.16 Records Management

In accordance with the Section 52 of the OPGGS(E)R, Amplitude Energy will store and maintain documents or records relevant to the EP in accordance with the Technical Information Management Procedure (CMS-IM-PCD-0002).

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14.0 Appendices

Appendix 1 - Concordance with the OPP

The Cooper Energy Pty Ltd, **East Coast Supply Project Offshore Project Proposal (ECSP OPP)** (Cooper Energy 2025) outlines the scope of the development and its activities in sufficient detail to enable a thorough evaluation of environmental impacts and risks, as well as the establishment of appropriate Environmental Performance Outcomes (EPOs).

Offshore Project Proposals are developed at an early stage of project planning, before the detailed planning of specific activities is completed. Consequently, more detailed descriptions of these activities and their associated impacts and risks are expected to be provided in subsequent Environment Plans (EPs) as project/activity definition matures (NOPSEMA Guidance Note: Offshore project proposal content requirements N-04790-GN1663 A473026). Following the acceptance of an OPP and prior to the submission of EPs, refinements or modifications to the methods or timing of individual project activities may occur. These refinements or modifications to the accepted project cannot be new activities and cannot significantly change the overall environmental impacts and risks of the project as described in the accepted OPP (NOPSEMA Guidance Note: Offshore project proposal content requirements N-04790-GN1663 A473026).

With the above requirements in mind, the Annie-2 Development Drilling EP has been assessed against the **ECSP OPP** to confirm that there are no new activities or significant changes to the environmental impacts or risks in this EP.

Table 14-1 presents the results of that assessment and presents a comparison of Environmental Performance Outcomes (EPOs) between the **ECSP OPP** and this EP (of relevance to the scope of this EP) and evaluates the significance of any changes.

Table 14-1: Comparison of Annie-2 Development Drilling EP EPOs and those of the East Coast Supply Project OPP

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
Atmospheric Emissions	EPO1: Manage atmospheric emissions generated by activities defined in this OPP in accordance with MARPOL Annex VI (Prevention of Air Pollution from Ships) enacted in the Navigation Act 2012, with no impacts to amenity outside of the operational area.	EPO13: Manage atmospheric emissions generated by activities defined in this EP in accordance with MARPOL Annex VI (Prevention of Air Pollution from Ships) enacted in the Navigation Act 2012, with no impacts to amenity outside of the operational area.	No change in the EPO wording - vessel activity is a key activity of the Annie-2 drilling EP.
Drilling Discharges	EPO2: Undertake drilling discharges management processes to reduce as far as practicable the overall volumes of WBDF discharged to the marine environment.	EPO2: Undertake drilling discharges management processes to reduce as far as practicable the overall volumes of WBDF discharged to the marine environment.	No change in the EPO wording.
	EPO3: Contingent use of SBDF only where technically required.	Not included.	This EPO is not included in the EP, as the activity description does not describe the use or contingent use of SBDF. There is no requirement to use SBDF for drilling the Annie-2 well.
	EPO4: Only approved chemicals (which meet low ecotoxicity pre-screening criteria or are further justified as ALARP) will be discharged to sea within project discharges.	EPO3: Only approved chemicals (which meet low ecotoxicity pre-screening criteria or are further justified as ALARP) will be discharged to sea within project discharges.	No change in the EPO wording. This is an Amplitude Energy standard.
	EPO5: Use solids control equipment, when drilling with riser installed, to recover and limit discharge of excess drilling fluids (and SBDF on cuttings) to the environment.	EPO4: Use solids control equipment, when drilling with riser installed, to recover and limit discharge of excess drilling fluids (and SBDF on cuttings) to the environment.	EPO remains the same The Activity description precludes the use of SBDF (refer Table 6-2 – Planned discharges) for the Activity, so reference to SBDF has been removed from the EPO as it is not relevant to the Activity. This EPO is equivalent to the OPP.
	EPO6: Manage discharge of residual bulks materials to the marine environment in accordance with Cooper Energy's residual bulks management process.	EPO5: Manage discharge of residual bulks materials to the marine environment in accordance with Amplitude Energy's residual bulks management process. No bulk discharge of SBDF.	EPO remains the same The Activity description precludes the use of SBDF (refer Table 6-2 – Planned discharges) for the Activity, so reference to SBDF has been

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
			removed from the EPO as it is not relevant to the Activity. This EPO is equivalent to the OPP.
	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.
	EPO10: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable; • not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018.	EPO6: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable; • not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018.	No change in the EPO wording.
	EPO11: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	EPO8: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	No change in the EPO wording. *Note - The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location.*
	EPO12: Seabed disturbance is limited to the planned disturbance areas defined in this OPP and within the Operational Area.	EPO9: Seabed disturbance is limited to the planned disturbance areas defined in this EP and within the operational area.	No change in the EPO wording. This is first activity under the OPP with an estimated disturbance of 1.32km^2. This is less than the total disturbance estimated for the Project - 20.4km^2. The disturbance areas included in Table 6-6 for this activity are equivalent for disturbance as described in the OPP - Table 8-63.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
Operational Discharges	EPO4: Only approved chemicals (which meet low ecotoxicity pre-screening criteria or are further justified as ALARP) will be discharged to sea within project discharges.	EPO3: Only approved chemicals (which meet low ecotoxicity pre-screening criteria or are further justified as ALARP) will be discharged to sea within project discharges.	No change in the EPO wording. This is an Amplitude Energy standard.
	EPO7: Planned vessel/ MODU discharges will meet AMSA Discharge Standards for operating in Australian waters.	EPO7: Planned vessel/ MODU discharges will meet AMSA Discharge Standards for operating in Australian waters.	No change in the EPO wording. Vessel and MODU activity is a key activity of the Annie-2 drilling EP.
	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.
Seabed Disturbance	EPO10: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable; • not disturb underwater heritage as defined under the *Underwater Cultural Heritage Act 2018*.	EPO6: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable; • not disturb underwater heritage as defined under the *Underwater Cultural Heritage Act 2018*.	No change in the EPO wording.
	EPO11: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	EPO8: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	No change in the EPO wording. *Note - The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location.*
	EPO12: Seabed disturbance is limited to the planned disturbance areas defined in this OPP and within the Operational Area.	EPO9: Seabed disturbance is limited to the planned disturbance areas defined in this OPP and within the Operational Area.	No change in the EPO wording. This is first activity under the OPP with an estimated disturbance of 1.32km^2. This is less than the total disturbance estimated for the Project - 20.4km^2.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
			The disturbance areas included in Table 6-6 for this activity are equivalent for disturbance as described in the OPP - Table 8-63.
	EPO13: No unplanned release of waste to the marine environment.	EP20: No unplanned release of waste to the marine environment.	No change in the EPO wording.
	EPO14: No introduction, establishment or spread of invasive marine species.	EPO21: No introduction, establishment or spread of invasive marine species.	No change in the EPO wording.
	EPO19: Impacts to commercially targeted species will be limited to temporary[3] and localised[3] change in fauna behaviours. [3] *Temporary and localised change in fauna behaviours for commercially targeted species limited to activity durations and seabed disturbance footprint defined in Section 6.3.2*	EPO10: Impacts to commercially targeted species will be limited to temporary[3] and localised[3] change in fauna behaviours. [3] *Temporary and localised change in fauna behaviours for commercially targeted species limited to activity durations and seabed disturbance footprint defined in Section 8.8.2 (of the OPP).*	No change in the EPO wording.
	EPO24: No impact to underwater cultural heritage	EPO23: No impact to underwater cultural heritage.	No change in the EPO wording.
	EPO25: Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within EPs for the activity.	EPO11: Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within EPs for the activity.	No change in the EPO wording.
Light Emissions	EPO9: Artificial light generated by the Activity will be managed to ensure biologically important behaviours of light-sensitive species that occur within the Activity light EMBA can continue while project activities are being undertaken, by applying relevant measures from the National Light Pollution Guidelines for Wildlife (DCCEEW,	EPO12: Artificial light generated by the Activity will be managed to ensure biologically important behaviours of light-sensitive species that occur within the Activity light EMBA can continue while project activities are being undertaken, by applying relevant measures from the National Light Pollution Guidelines for Wildlife (DCCEEW	No change in the EPO wording.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
	2023k), whilst meeting lighting requirements for safe navigation and work at night.	2023), whilst meeting lighting requirements for safe navigation and work at night.	
GHG Emissions	EPO15: GHG emissions related to the Project, including (scope 1 [Inside Project Boundary], scope 1* [Outside Project Boundary] and scope 3) emissions are consistent with Australia's international GHG emissions commitments, as outlined in the Climate Change Act 2022. Emissions are to be determined based on the NGER scheme and managed by the Safeguard Mechanism.	EPO13: GHG emissions related to the Project, including (scope 1 [Inside Project Boundary], scope 1* [Outside Project Boundary] and scope 3) emissions are consistent with Australia's international GHG emissions commitments, as outlined in the Climate Change Act 2022. Emissions are to be determined based on the NGER scheme and managed by the Safeguard Mechanism.	No change in the EPO wording. .
Underwater Sound Emissions (Impulsive & Continuous)	EPO16: Impacts to marine fauna from underwater anthropogenic noise emissions will be limited to temporary* behavioural change localised** to the noise source. **Not exceeding the duration of the activity component (i.e. vessel campaign) (described in Section 3.2)* ***Not exceeding the noise EMBA defined for the activity (described in Sections 6.5 and 6.6)*	EPO14: Impacts to marine fauna from underwater anthropogenic noise emissions will be limited to temporary* behavioural change localised** to the noise source. **Not exceeding the duration of the activity component (i.e. vessel campaign) (described in Section 8.1.2 and 8.2.2 of the OPP).* ***Not exceeding the noise EMBA defined for the activity (described in Section 8.1.5 and 8.2.5 of the OPP)*	No change.
	EPO17: No death or injury[1] to EPBC Act listed threatened, migratory or cetacean species. [1]*Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*	EPO15: No death or injury[1] to EPBC Act listed threatened, migratory or cetacean species. [1]*Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*	No change in the EPO wording.
	EPO18: Project related underwater noise within biologically important areas[1] and habitat critical to the	EPO16: Project related underwater noise within biologically important areas[1] and habitat critical to the survival of	No change in the EPO wording.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
	survival of relevant species will be managed through the implementation of Cooper Energy Offshore Victoria Whale Disturbance Risk Management Process, such that: • Any blue whale continues to utilise biologically important areas without injury and is not displaced from a foraging area. • Southern right whales are not prevented from utilising biologically important areas[2] or habitat critical to the survival of a species or cause auditory impairment[1]. • The risk of behavioural disturbance to southern right whales will be limited to temporary behavioural disturbance of individuals. [1]*Biologically important behaviours such as reproduction, feeding, migration and resting (DCCEEW, 2023).* [2]*Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*	relevant species will be managed through the implementation of Amplitude Energy Offshore Victoria Whale Disturbance Risk Management Process, such that: • Any blue whale continues to utilise biologically important areas without injury and is not displaced from a foraging area. • Southern right whales are not prevented from utilising biologically important areas[2] or habitat critical to the survival of a species or cause auditory impairment[1]. • The risk of behavioural disturbance to southern right whales will be limited to temporary behavioural disturbance of individuals. [1]*Biologically important behaviours such as reproduction, feeding, migration and resting (DCCEEW 2023).* [2]*Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*	
	EPO20: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable.	EPO17: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable.	No change in the EPO wording. Sections 6.5 and 6.6 of the EP has been based on activity specific modelling undertaken to support the development of this EP. Where undertaken, the modelling includes for appropriate scenarios and thresholds to determine the worst case potential impacts to marine fauna.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
Interaction with Other Marine Users	EPO22: Implement Fisheries Damages Protocol to provide a compensation mechanism to fishers who damage fishing equipment on East Coast Project infrastructure outside of the PSZ.	EPO18: Implement Fisheries Damages Protocol to provide a compensation mechanism to fishers who damage fishing equipment on Activity infrastructure outside of the PSZ.	EPO remains the same This EP is specific to the Annie-2 development well and xmas tree. The EPO has been amended accordingly. This is the equivalent of the OPP EPO – which describes East Coast Project infrastructure.
	EPO23: No unplanned interactions between the project vessels and other marine users.	EPO24: No unplanned interactions between the project vessels and other marine users.	No change in the EPO wording.
Loss of Material or Waste Overboard	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.
Interaction with Marine Fauna	EPO21: No vessel strikes with EPBC Act listed threatened, migratory or cetacean species	EP22: No vessel strikes with EPBC Act listed threatened, migratory or cetacean species	No change in the EPO wording.
Introduction, Establishment & Spread of IMS	EPO14: No introduction, establishment or spread of invasive marine species	EPO21: No introduction, establishment or spread of invasive marine species	No change in the EPO wording.
Accidental Release MDO	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.
	EPO20: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable	EPO17: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable	No change in the EPO wording. Section 6.8 of the EP has been based on activity specific modelling undertaken to support the development of this EP. Where undertaken, the modelling includes for appropriate scenarios and thresholds to determine the worst case potential impacts to marine fauna.
Accidental Release LOWC	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO11: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
	EPO20: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable	EPO17: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable	No change in the EPO wording. Section 6.8 of the EP has been based on activity specific modelling undertaken to support the development of this EP. Where undertaken, the modelling includes for appropriate scenarios and thresholds to determine the worst case potential impacts to marine fauna.
First Nations Cultural Heritage Values and Sensitivities	EPO10: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable. • not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018.	EPO6: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • Avoid areas of high relief outcrops, reefs, and sponge beds, where practicable. • Not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018.	No change in the EPO wording.
	EPO11: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	EPO8: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	No change in the EPO wording. *Note - The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location.*
	EPO12: Seabed disturbance is limited to the planned disturbance areas defined in this OPP and within the Operational Area.	EPO20: Seabed disturbance is limited to the planned disturbance areas defined in this EP and within the operational area.	No change in the EPO wording. This is first activity under the OPP with an estimated disturbance of 1.32km^2. This is less than the total disturbance estimated for the Project - 20.4km^2. The disturbance areas included in Table 6-6 for this activity are equivalent for

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
			disturbance as described in the OPP - Table 8-63.
	EPO24: No impact to underwater cultural heritage	EPO23: No impact to underwater cultural heritage	No change in the EPO wording.
	EPO25: Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within EPs for the activity.	EPO11: Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within the EP for the Activity.	No change in the EPO wording.

Table 14-2: Comparison of Annie-2 Development Drilling EP Control Measures and those of the East Coast Supply Project OPP

Annie 2 Development EP		**Equivalent CM described in the East Coast Supply Project OPP**	**Comments**
Control	**EPS**		
CM01: Marine exclusion and caution zones	EPS1.1: Marine exclusion and caution zones will not exceed distances required for safe operations. These zones, where established, will extend only as far as: • A temporary 3.5 km exclusion / cautionary zone around the MODU during the Activity, established via Notice to Mariners. • A temporary 500 m safety exclusion zone around activity vessels established via Notice to Mariners. • A 500 m PSZ gazetted around well, marked on navigational charts for awareness.	CM12: Marine exclusion, caution and petroleum safety zones May include: • A temporary 3 km cautionary zone around the MODU during the drilling program. • A temporary 500 m exclusion/caution zones to be established via Notice to Mariners around vessels undertaking petroleum activities. • PSZs will be gazetted around wells and other equipment where required for equipment integrity management. Subsea infrastructure will be marked on navigational charts for awareness.	Both include application of: • exclusion / cautionary zone around the MODU, and PSZ • temporary 500m safety zone around activity vessels (including MODU) • PSZ around Annie 2 development well once drilling completed. The cautionary zone for Annie-2 Development well, extends to 3.5km, given the mooring spread from the MODU and a 1km buffer. The control measure for 500m exclusion/caution zones to be established via Notice to Mariners around vessels undertaking petroleum activities. A PSZ will be in place for Annie 2 well once the MODU departs.
CM02: Pre-start notifications	EPS2.1: AHO will be notified of activities where vessels will be in the Operational Area no less than 4 weeks to allow generation of Notice to Mariners (NTM). EPS2.2: AMSA's JRCC will be notified 24–48 hours before operations commence to enable AMSA to distribute an AUSCOAST warning. AMSA JRCC will be notified at the end of activities.	CM12: Marine exclusion, caution and petroleum safety zones May include: • A temporary 500 m exclusion/caution zones to be established **via Notice to Mariners** around vessels undertaking petroleum activities.	Both include notifications to AHO and AMSA - Notice to Mariners & AUSCOAST warning. Note: EP includes an uplift through: • EPS2.1 to notify AHO no less than 4 weeks ahead of vessels entering the Operational area • EPS2.2 for timings and specifics of JRCC notifications
CM03: Marine Assurance Process	EPS3.1: The vessels and MODU will meet navigational safety requirements under the Navigation Act 2012 and associated Marine Orders, including but not limited to:	CM1: Marine Assurance Process. The vessels and MODU will adhere to navigational safety requirements under the	CM1 encompasses the relevant controls that vessels (including MODU) implement to meet the requirements of the Navigation Act 2012, and AMSA Marine Orders as relevant to the

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• AMSA MO 21: Safety and emergency arrangements gives effect to SOLAS regulations dealing with life-saving appliances and arrangements, safety of navigation and special measures to enhance maritime safety. • AMSA MO 27 - Safety of Navigation and Radio Equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards • AMSA MO 30 - Prevention of collisions requires that onboard navigation, radar equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards. • AMSA MO 70 - Seafarer certification meets the requirements for qualifications and training.	Navigation Act 2012 and associated Marine Orders, including but not limited to: • AMSA MO 21 – Safety and Emergency Arrangements • AMSA MO 27 - Safety of Navigation and Radio Equipment • AMSA MO 30 - Prevention of Collisions. • AMSA MO 31: SOLAS and non-SOLAS certification The MODU and vessels operating in the operational area will be required to adhere to navigations safety requirements. AMSA Marine Orders 21 and 30 for the safety of navigation and prevention of collisions require that onboard navigation, watchkeeping, radar equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards.	size of the vessels. Each EPS pertains to different controls from the Navigation Act 2012, and AMSA Marine Orders that manage potential environment risk associated with this Activity. EPS 3.1 aligns with the OPP.
	EPS3.2: The vessels and MODU will adhere to navigational safety requirements under the Navigation Act 2012 and associated Marine Orders, including but not limited to: • AMSA Marine Order 31 - SOLAS and non-SOLAS certification requires that vessels undertaking Annie 2 development well activities will have in date certification in accordance with AMSA Marine Order 31 (Vessel surveys and certification). • AMSA MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances – requires that vessels undertaking Annie 2	CM1: Marine Assurance Process All vessels contracted will meet survey, maintenance and certification of regulated Australian vessels as per AMSA MO 91 and MO 93.	EPS 3.2 aligns with the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	development well activities will have emergency plans to address pollution events (including containment and clean up) involving noxious liquids.		
	EPS3.3: Vessels will comply with Marine Orders – Part 97: Marine Pollution Prevention – Air Pollution (appropriate to vessel class) for emissions from combustion of fuel including: • Hold a valid International Air Pollution Prevention (IAPP) certificate and have a current international energy efficiency certificate. • Have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI. • Engine NOx emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI. • Sulphur content of diesel/fuel oil complies with Marine Order Part 97 and Regulation 14 of MARPOL 73/78 Annex VI.	CM1: Marine Assurance Process Vessels and MODU operating in the operational area will comply with AMSA Marine Order 97 Marine Pollution Prevention – Air Pollution (appropriate to vessel class) for emissions from combustion of fuel including: • Hold a valid International Air Pollution Prevention (IAPP) certificate. • Engine NOx emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI. • Sulphur content of diesel/fuel oil complies with Marine Order Part 97 and Regulation 14 of MARPOL 73/78 Annex VI • Hold a current international energy efficiency certificate. • Have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI. .	EPS 3.3 aligns with the OPP.
	EPS3.4: All discharges will comply with relevant MARPOL 73/78, Navigation Act 2012, Protection of the Sea (Prevention of Pollution) Act 1983 and subsequent Marine Order requirements (as appropriate for vessel classification): • 2017 Guidelines for the Implementation of MARPOL Annex V to assist shipowners,	CM1: Marine Assurance Process All wastewater discharges will comply with relevant MARPOL 73/78, Navigation Act 2012, Protection of the Sea (Prevention of Pollution) Act 1983 and subsequent Marine Order requirements (as appropriate for vessel classification): • AMSA MO 91 - Marine Pollution Prevention (Oil)	EPS 3.4 aligns with the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	masters and crews in applying the Annex V discharge requirements. • AMSA MO 91 - Marine Pollution Prevention (Oil) • AMSA MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances • Bilge water treated via a MARPOL (or equivalent) approved oily water separator and only discharge if oil content less than 15 ppm.	• AMSA MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances • AMSA MO 96 - Marine Pollution Prevention (Sewage).	
	EPS3.5: In accordance with MARPOL Annex I and AMSA MO 91 [Marine Pollution Prevention – oil], a Shipboard Marine Pollution Emergency Plan (SMPEP) or Shipboard Oil Pollution Emergency Plan (SOPEP) (according to class) is required to be developed. To prepare for a spill event, the SMPEP/SOPEP details: • Response equipment available to control a spill event. • Review cycle to ensure that the SMPEP/SOPEP is kept up to date. • Testing requirements, including the frequency and nature of these tests. In the event of a spill, the SMPEP/SOPEP details: • Reporting requirements and a list of authorities to be contacted. • Activities to be undertaken to control the discharge of hydrocarbon. Bunkering / bulk liquids will be transferred in accordance with operational procedure(s) to reduce the risk of an unintentional release to sea during transfer.	CM1: Marine Assurance Process Vessels shall meet the AMSA Marine Order (MO) requirements, including: • AMSA MO Part 91: Marine Pollution Prevention – Oil In accordance with MARPOL Annex I and AMSA MO 91 [Marine Pollution Prevention – oil], a SMPEP or SOPEP (according to class) is required for each vessel and MODU. Response equipment will be available in accordance with the SMPEP / SOPEP. Training and testing will be undertaken in accordance with the SMPEP/SOPEP exercise schedule. In the event of a spill, the SMPEP/SOPEP details: • Reporting requirements and a list of authorities to be contacted. • Activities to be undertaken to control the discharge of hydrocarbon. CM2: Offshore Operational Procedures In accordance with MARPOL Annex I and AMSA	EPS 3.5 aligns with the OPP, and incorporates the requirements detailed in CM1 and CM2 of the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
		MO 91 [Marine Pollution Prevention – oil], a Shipboard Marine Pollution Emergency Plan (SMPEP) or Shipboard Oil Pollution Emergency Plan (SOPEP) (according to class) is required to be developed. To prepare for a spill event, the SMPEP/SOPEP details: • response equipment available to control a spill event. • review cycle to ensure that the SMPEP/SOPEP is kept up to date and • review cycle to ensure that the SMPEP/SOPEP is kept up to date and • testing requirements, including the frequency and nature of these tests. In the event of a spill, the SMPEP/SOPEP details: • reporting/ notification requirements and a list of authorities to be contacted. • activities to be undertaken to control the discharge of hydrocarbon. Bunkering / bulk liquids will be transferred in accordance with operational procedure(s) to reduce the risk of an unintentional release to sea during transfer.	
	EPS3.6: The vessels and MODU will meet AMSA MO 95 - Marine Pollution Prevention (Garbage), MARPOL 73/78 Annex V which requires that a garbage management plan and garbage record book is in place and implemented to manage waste offshore. Requirements include: • segregating waste on the MODU / vessels	CM1: Marine Assurance Process MODU and vessels will comply with relevant MARPOL Commonwealth requirements and subsequent Marine Orders for waste management practices.	EPS 3.6 aligns with the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• storing solid wastes in designated areas before sending them to shore for recycling, disposal, or treatment • waste receptacles that contain light-weight, solid waste will be covered to prevent waste from blowing overboard • no discharge of waste or plastic products from general operational or maintenance.		
	EPS3.7 : Vessels will comply with AMSA MO 96 - Marine Pollution Prevention (Sewage), Requirements for offshore discharge of sewage have been incorporated into the MARPOL 73/78 sewage discharge control measure. Sewage discharged at sea is treated via a MARPOL (or equivalent) approved sewage treatment system prior to discharge. Food waste only discharged when: • Vessel is en route and >12 nm from land. • Food waste is comminuted or ground to <25 mm and vessel is en route and >3 nm from land. • Food waste is comminuted or ground to <25 mm and platform is >12 nm from land.	CM1: Marine Assurance Process All wastewater discharges will comply with relevant MARPOL 73/78, Navigation Act 2012, Protection of the Sea (Prevention of Pollution) Act 1983 and subsequent Marine Order requirements (as appropriate for vessel classification): • AMSA MO 91 - Marine Pollution Prevention (Oil) • AMSA MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances • AMSA MO 96 - Marine Pollution Prevention (Sewage).	EPS 3.7 aligns with the OPP.
	EPS3.8 : Vessel cargo will be loaded, stowed and secured in accordance with AMSA Marine Order 42 (Carriage, Stowage and Securing of Cargoes and Containers).	CM2: Offshore Operational Procedures In accordance with Marine Order 42 (Carriage, stowage and securing of cargoes and containers), where relevant, to ensure cargo is packed, loaded, stowed and secured throughout each voyage.	Given this control relates to AMSA marine orders, it has been incorporated into CM03 in this EP.
	EPS3.9 : From 1 January 2026 applicable vessels will not use or store firefighting foams containing PFOS, as adopted by the International Maritime Organisation (IMO).		Additional control incorporated from the approved Athena Supply Project EP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	EPS 3.10: Equipment used to treat discharges to AMSA standards is installed and operational on the Vessels and MODU (as relevant to class), or otherwise the respective discharges do not occur.		Additional control incorporated from the approved Athena Supply Project EP.
	All of the above EPS.	CM8: Emissions and Discharges Standards Prior to commencing the offshore activity, the following will be verified, as relevant to vessel class: • 2017 Guidelines for the Implementation of MARPOL Annex V to assist shipowners, masters and crews in applying the Annex V discharge requirements. • Bilge water treated via a MARPOL (or equivalent) approved oily water separator and only discharge if oil content less than 15 ppm. • Sewage discharged at sea is done so only in accordance with AMSA discharge standards and treated via a MARPOL (or equivalent) approved sewage treatment system as applicable. • Food waste only discharged in accordance with AMSA, MARPOL and relevant State discharge standards.	The OPP commits to checking relevancy of AMSA, MARPOL and state requirements for discharge of bilge water, sewage and food waste for project. Each of the requirements described in CM08 are encompassed in the EPS for CM03. Therefore the CM is not a separate CM in this EP. The 2017 guidelines are incorporated to EPS 3.4. EPS 3.7 incorporates the relevant requirements for sewage discharge. EPS 3.7 ensures discharge of food waste requirements are met.
CM04: Fisheries Damage Protocol	EPS4.1: A Fisheries Damage Protocol is in place to provide a compensation mechanism to fishers who damage fishing equipment on Activity infrastructure outside of a PSZ. The protocol was established in collaboration with SETFIA (fisheries peak body). The protocol includes:	CM11: Fisheries Damages will be in place to provide a compensation mechanism to fishers who damage fishing equipment on East Coast Project infrastructure outside of the PSZ	OPP provided future provision for a compensation mechanism to fishers who damage fishing equipment on East Coast Project infrastructure outside of the PSZ. Given that following the completion of Annie-2 well, a PSZ will be placed around the well and tree it is unlikely that fishers will damage

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• an incident report form with prompts for details of fishing activities, sea state, details of any damaged gear, details of repairs required, photos, dates and times. • commitment for initial response to claimant within 4 working days confirming details. • the mutually agreed process for selecting the Tribunal (an independent assessor), whose decision is final and binding • requirement for Tribunal to be formed within 21 days of initial notification to undertake assessment of evidence and determine fault and damages payable.		their property as the protocol excludes for damage within the PSZ. This control is conservatively included in event fishers may damage their equipment should they enter the precautionary zone & damage their equipment on the moorings/ anchors for the MODU when the MODU is drilling. EPS 4.1 if focused on the protocol itself and EPS 4.2 is the PS required in event compensation is payable to fishers.
	EPS4.2: In event that the Tribunal determines compensation is payable under the Fisheries Damage Protocol: • payment will be made within 14 days of that decision. • a deed of release is provided to the claimant where compensation is payable, in the form provided for in the Protocol (schedule 5).		
CM05: Ongoing consultation	EPS5.1: Further engagement will take place during the development and implementation of component EPs. This will include: • details relating to notification of third-party stakeholders, • engagement with other titleholders in the Otway with respect to each others ongoing activities and potential cumulative impacts. Relevant information received will be included within the EPs as appropriate.	CM13: Ongoing Engagement Further engagement will take place during the development and implementation of component EPs. This will include: • details relating to notification of third-party stakeholders, • engagement with other titleholders in the Otway with respect to each others ongoing activities and potential cumulative impacts.	EPS 5.1 aligns with the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	EPS5.2: Notification of activity commencement and completion to relevant stakeholders as per notifications register.	Relevant information received will be included within the EPs as appropriate.	EPS 5.2 is a requirement under the Regulations.
	EPS5.3: Any complaints received by Amplitude Energy from other marine users in relation to air quality will be investigated and outcomes shared with the person who made the complaint.		The EP has introduced an additional EPS to the management of atmospheric emissions relating to investigating and responding to complaints.
	EPS5.4: Notifications for any on-water activities and ongoing consultations undertaken per Section 12.12.		EPS5.4 aligns with the intent of CM13 in the OPP.
	EPS5.5: Observation, incidents, and opportunities for improvement regarding the interaction with other marine users will be reported to other petroleum titleholders.		Amplitude meets with other Operators in the Otway to share information in regards their petroleum activities.
CM06: Light Management Measures	EPS6.1: MODU and vessel lighting will be limited to the minimum required with the exception of emergency events for navigational and safety requirements'. MODU and the vessels will implement light management measures developed with consideration to the National Light Pollution Guidelines for Wildlife, these include, but are not limited to: • Outward facing lights will be reduced to minimum levels required for a safe work environment. • Directions to minimise the use of non-essential lights (e.g. close blinds, turn off lights when leaving a room) will be included in MODU and vessel inductions. • Recording and reporting of any seabirds found on the MODU or vessels in need of care.	CM4: Light Management Measures MODU and the vessels will implement light management measures developed with consideration to the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023k), these include, but are not limited to: • Outward facing lights will be reduced to minimum levels required for a safe work environment. • Requirement to minimise the use of non-essential lights (e.g. close blinds, turn off lights when leaving a room) will be included in MODU and vessel inductions. • Recording and reporting of any seabirds found on the MODU or vessels in need of care. • Procedures to manage and care for any seabirds found on board requiring	The control measure in the EP is equivalent to that described in the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• Procedures to manage and care for any seabirds found on board requiring care, including remote advice from Zoos Victoria Marine Response Unit (MRU) or equivalent.	care, including remote advice from Zoos Victoria Marine Response Unit (MRU) or equivalent. • Adaptive management will be detailed in the light management measures to be included in future EPs under this OPP when scheduling of the activity is known in greater detail, including the potential for concurrent vessel/ MODU activities and overlap with biologically important periods.	
CM07: Well Testing Program	EPS7.1: Periods of flaring will not exceed 36 hours or flow rate of 60 MMscfd	CM21: Well Flowback Program - Clean-up and flowback criteria will be defined within the flowback program. The flowback criteria will establish the rates and volumes to be produced from the well to gather sufficient information to characterise the reservoir and fluid, and clean-up the well. Flow from the well will cease once sufficient information has been gathered. Flared volumes of gas will not exceed a rate of 60 MMscf/day, or duration of 60 hours per well.	The EP and OPP both commit to flaring volumes of gas not exceeding a rate of 60 MMscf/day for a period of 60 hours. It is expected that the flaring for well testing Annie-2 will not exceed 36 hours (which is a shorter duration than that described in the OPP).
	EPS7.2: Confirm flare tip is clear of birds prior to commencing flaring	No equivalent in the OPP.	The commitments in EPS 7.2 – 7.4 are in addition to those described in the OPP and included to reduce the potential impacts to birds associated with the flare, as well as reduce the GHG and atmospheric emissions associated with the flaring.
	EPS7.3: Well Test Program will provide for: • A burner which atomises hydrocarbons to yield smoke free combustion will be used to burn-off gas and condensate returned from the well. • Burner & flare have redundant pilots		
	EPS7.4: Well Test Program will provide for: • The flare tip will be monitored while flaring occurs.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• Burner pilots are ignited before and during flow back activities to minimise dropout from the flare. • Dedicated crew members will be on flare watch while flaring is undertaken to identify dropout and notify the well test team to cease or modify the well test to eliminate dropout.		
CM08: Planned Maintenance System	EPS8.1: Planned maintenance will be implemented throughout the activity. This ensures that critical equipment on vessels and MODU will be maintained in manufacturer's instructions and ongoing maintenance to ensure efficient operation including: • Combustion Equipment (Vessels).	CM1: Marine Assurance Process Power generation and propulsion systems on vessels will be operated in accordance with manufacturer's instructions and ongoing maintenance in accordance with vessel planned maintenance system, to ensure efficient operation.	CM08 describes for the planned maintenance of systems (that manage for emissions and discharges) on board vessels and MODU to ensure that they operate to required specifications.
	EPS8.2: Planned maintenance will be implemented throughout the activity. This ensures that critical equipment on vessels and MODU will be maintained in manufacturer's instructions and ongoing maintenance to ensure efficient operation including: • equipment involved in discharge management		The EP includes an additional CM to the maintenance of equipment involved in discharge management above the OPP.
	EPS8.3: Equipment and propulsion systems generating impulsive or continuous sound emissions will be operated in accordance with manufacturer's instructions and ongoing maintenance in accordance with vessel and MODU's planned maintenance system, to ensure efficient operation.	CM1: Marine Assurance Process - Equipment generating impulsive sound emissions will be operated and maintained in accordance with manufacturer's instructions to ensure efficient operation.	EP and OPP both commit to equipment and propulsion systems being operated and maintained in accordance with manufacturer requirements.
CM09: Offshore Equipment	EPS9.1: Solids control equipment (MODU) is installed and operational once BOP is in place on the well to enable recovery and re-use of drilling fluids, to reduce volumes discharged.	CM7: Offshore Equipment Additional equipment, such as solids equipment, will be available on the MODU. Equipment will assist with recovering and	OPP and EP commit to solids control equipment on the MODU to recover and reduce the volume of discharged fluids.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	Equipment used to treat discharges to AMSA standards is installed and operational on the Vessels and MODU, or otherwise the respective discharges do not occur.	reducing the discharge of excess fluids and reduce the volume of SBDF on cuttings.	Note that the reference to SBDF is removed, given no SBDF is used in this Activity. The EP commits to have equipment to treat discharges to AMSA standards on the vessels and MODU, or otherwise the respective discharges do not occur.
CM10: Amplitude Energy Offshore Chemical Assessment Procedure	EPS10.1: The Amplitude Energy Offshore Chemical Assessment Procedure will be used to ensure that project chemicals with the potential to be discharged to sea are not of unacceptable risk. This will be done by: • preferentially selecting products that are on the current OSPAR PLONOR list, and/or • are rated Gold/Silver/E or D under the UK OCNS, and do not have a substitution warning, or, • have a completed a hazard assessment confirming they are not of unacceptable risk (toxic, very bioaccumulative (and bioavailable), and highly persistent) and are justified by technical need and analysis of alternatives.	CM6: Cooper Energy Offshore Chemical Assessment Procedure. Project chemicals will meet the requirements of the Cooper Energy Offshore Chemical Assessment Procedure. This process is used to ensure the lowest toxicity, most biodegradable and least bioaccumulative chemicals are selected which meet the technical requirements, where their function necessitates discharge to sea. The process consults public chemical assessment repositories such as PLONOR list, OCNS Definitive Ranked List, OSPAR and OCNS listings for those chemicals to be discharged. Eco-toxicity is evaluated with any required control measures defined. Chemicals that are highly toxic, have high bioaccumulation potential, and have high persistence in organisms are screened out during the assessment process. Only chemicals that meet low ecotoxicity pre-screening criteria or are further justified as ALARP can be approved for discharge. An accepted chemical list is issued to the offshore project team detailing which products may be discharged and in what circumstances.	Both the EP and OPP commit to applying the company chemical assessment procedure to manage impacts through potential discharge to sea unacceptable risk.
	EPS10.2: An accepted chemical list will be issued to the offshore project team detailing which products may be discharged and in what circumstances.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
CM11: Titleholder Collaboration	EPS11.1: Amplitude Energy will continue to engage in industry collaboration efforts relating to the management of unused bulks.	Described in Figure 12-7 of the OPP.	The EP includes this as a specific CM to continue engagements relating to the management of unused bulks building on the OPP reference to industry collaboration (Section 8.6.2.1).
	EPS11.2: Amplitude Energy will share sightings data with other Titleholders in the Otway region and local research organisations to help inform each other's programs of work and respective risk reviews.	Described in Figure 12-5 of the OPP.	The EP includes this as a specific CM to share sightings data and demonstrate implementation of the Whale Disturbance Risk Management Process.
CM12: Inventory Management	EPS12.1: Solids control equipment will be used as part of the drilling fluid circulation system when drilling with riser installed, to help condition the drilling fluid for reuse, and minimise the overall volumes of drilling fluid discharged. At the end of the Activity unused bulks (barite, bentonite, cement) will be managed in accordance with Figure 12-9. Upon completion of the activity excess dry bulks will be managed with one of the following: • retained onboard for future activity where acceptable by the subsequent operator or, • use up cement via increasing the volume used in the well, if design allows, • returned to shore where feasible, where considered ALARP after risk assessment during the execution phase, and where permitted by the MODU and vessel operator safe systems of work. Spare chemical additives will be retained on board where acceptable by the subsequent operator or returned to shore.	CM25: Inventory Management Aligned to Minimata Convention, quality control limits for barite will be applied: • Mercury (Hg) – 1 mg/kg (1 ppm) dry weight in stock barite. • Cadmium (Cd) – 3 mg/kg (3 ppm) dry weight in stock barite. At the end of the Project unused bulks will be managed in accordance with Figure 12-7. Upon completion of the activity, excess dry bulks will be managed with one of the following: • retained onboard for future activity where acceptable by the subsequent operator • use up cement via increasing the volume used in the well, if design allows • returned to shore where feasible, where considered ALARP after risk assessment during the execution phase, and where permitted by the MODU and vessel	OPP and EP align on inventory management control measures.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	In the event the re-use and return-to shore options are not feasible and ALARP then discharges of bulks will be: • Slurrified with water prior to release overboard to facilitate dispersion • Limited to 50m^3 of dry bulk per batch of slurry released to facilitate dispersion • Released no closer to shore, and in water depths no shallower than, the location of the well being constructed, to ensure impacts remain within the parameters assessed within the EP.	operator safe systems of work. Spare chemical additives will be retained on board where acceptable by the subsequent operator or returned to shore.	
	EPS12.2: Barite concentrations will be at or below: • Mercury (Hg) – 1 mg/kg (1 ppm) dry weight in stock barite. • Cadmium (Cd) – 3 mg/kg (3 ppm) dry weight in stock barite.		
	EPS12.3: Detailed cementing procedures will be developed and implemented before cementing activities commence		
	EPS12.4: Actual cement use and discharge will be reconciled against planned quantities throughout the campaign.		
CM13: Offshore Operational Procedures	EPS13.1: Existing infrastructure will be protected from impact by mooring equipment via: • Mooring analysis and plan by mooring specialist which accounts for the locations of existing infrastructure. • Anchor selection and placement to reduce potential for anchor drag.	No equivalent in the OPP.	Additional control incorporated from the approved Athena Supply Project EP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	Further contingencies will be in place to minimise the potential for damage to existing infrastructure. Including: • Mooring design which includes a 12-anchor spread to provide additional redundancy for position keeping should a mooring fail. • Dynamic positioning – available in the event of mooring failure, where required for station keeping. Field entry / exit protocol – vessels will require approval from the Athena Gas Plant Person In Charge (PIC) to enter the field; asset risk management measures must be demonstrated for approval to be granted.		
	EPS13.2: Mooring procedures will ensure: • Adequate tensioning of mooring is applied and maintained. • Mooring equipment is only installed or stored within the designed radius areas of the mooring spread. Seabed relief and sensitive seabed features are considered based on seabed surveys, and sensitive features (i.e. areas of high relief) are avoided where practicable.	CM2: Offshore Operational Procedures Mooring procedures for the MODU will reduce overlap/disturbance by ensuring: • Adequate tensioning of mooring for the MODU is applied and maintained. • Mooring equipment for the MODU is only installed or stored within the designed radius areas of the mooring spread. The final selection of well locations, flowline paths, mooring and other infrastructure will consider survey observations to ensure: • Areas of seabed habitat types including high relief outcrops, reefs and sponge beds will be avoided, or overlap with the Project footprint is reduced, where practicable.	OPP and EP align on mooring procedure control measures with both EPS 13.2 and EPS 16.1 (in relation to underwater heritage, debris and hazards on the seafloor).

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
		• Underwater heritage, debris and hazards on the seafloor will be avoided and not overlapped with the Project footprint.	
	EPS13.3: Retrieval of mooring equipment, including transponders, from the sea floor prior to or at the completion of the activities.	No equivalent in the OPP.	Aligns with OPP commitment to remove
	EPS13.4: Drilling Discharges Management processes minimise as far as practicable, the overall volumes of WBDF discharged to the marine environment. It does this by defining the: • volumes of fluids required for safe execution of the activity, including contingency for well control. • fluids storage arrangements and transfer capacities on the MODU and support vessels, and how storage capacity will be actively managed to facilitate re-use of WBDF. • properties of the fluid required to be maintained throughout the different stages of well construction. • fluid acceptability criteria for re-use. • the solids control equipment to enable re-use of fluids. These aspects of drilling fluids management are a direct result of the well design and technical requirements that are defined in the WOMP. Drilling and cementing procedures will define how each step of the well construction process is to be completed in accordance with relevant	CM2: Offshore Operational Procedures Drilling Discharges Management processes minimise as far as practicable, the overall volumes of WBDF discharged to the marine environment. It does this by defining the: • volumes of fluids required for safe execution of the activity, including contingency for well control. • fluids storage arrangements and transfer capacities on the MODU and support vessels, and how storage capacity will be actively managed to facilitate re-use of WBDF. • properties of the fluid required to be maintained throughout the different stages of well construction. • fluid acceptability criteria for re-use. • the solids control equipment to enable re-use of fluids. These aspects of drilling fluids management are a direct result of the well design and technical requirements that are defined in the WOMP. Drilling and cementing procedures will define how each step of the well construction	OPP and EP align on the Drilling Discharges Management processes. This activity will not use SBDF therefore control measures related to SBDF are not carried into this EP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	standards (as defined in the WOMP) before the offshore activities take place.	process is to be completed in accordance with relevant standards (as defined in the WOMP) before the offshore activities take place. SBDF may be used where technical requirements preclude the use of WBDF (contingent), only once the riser between the well and MODU is installed. This ensures SBDF is circulated in a closed loop and no bulk SBDF fluids are discharged overboard. Drill cuttings recovered with the SBDF will be processed on the MODU to recover and reduce residual SBDF content prior to overboard discharge. There will be no bulk discharge of SBDF.	
	EPS13.5: Vessel operators shall adhere to the distances and vessel management practices of EPBC Regulations (Part 8) and Victorian (Marine Mammals) Regulations within respective jurisdictions, as a minimum, and shall report vessel interactions with dolphins and whales. Caution zones will be extended to 500m around all whales. Helicopters will not fly lower than 1650 ft when within 500 m horizontal distance of a cetacean except when landing or taking off and will not approach a cetacean from head on. Marine mammal sightings will be recorded and submitted to DCCEEW. Sightings will be reported within three months of the end of the activity.	CM2: Offshore Operational Procedures All vessels will adhere to the distances and vessel management practices of EPBC Regulations (Part 8 Division 8.1 interacting with cetaceans) as a minimum. All helicopters and vessels will adhere to the distances and vessel management practices of EPBC Regulations (Part 8 Division 8.1 interacting with cetaceans).	This control measure is aligned between the EP and OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
CM14: MODU Material Transfer Process	EPS14.1: MODU will have a bulk fluid transfer process in place before commencing operations. The process will include: • MODU-to-vessel communication protocols. • Transfer hose integrity checks. • Transfer hose pressure testing. • Continuous visual monitoring while bunkering. • Tank volume monitoring while bunkering. • Avoidance of bulk hydrocarbon transfers at night, or otherwise artificial illumination of the of the operational areas on the MODU, vessel and water between them during the transfer. • Weather limitations for bulk transfers.	CM29: MODU Material Transfer Process MODU will have a bulk fluid transfer process in place before commencing operations. The process will include: • MODU-to-vessel communication protocols. • Transfer hose integrity checks. • Transfer hose pressure testing. • Continuous visual monitoring while bunkering. • Tank volume monitoring while bunkering. • Avoidance of bulk hydrocarbon transfers at night, or otherwise artificial illumination of the of the operational areas on the MODU, vessel and water between them during the transfer. • Weather limitations for bulk transfers.	This control measure is aligned between the EP and OPP.
	EPS14.2: Transfer hoses for hydrocarbons shall comprise sufficient floating devices and self-sealing weak-link couplings in the midsection of the hose string.	No equivalent in the OPP.	Additional control incorporated from the approved Athena Supply Project EP.
CM15: Campaign Risk Review	EPS15.1: A Campaign Risk Review, as detailed in Figure 12-6 will be undertaken in the 6-months prior to a campaign activity commencing, to: • Model noise emissions for any additional activity scenarios not already provided for in this EP. • Integrate into modelling the latest relevant sound exposure thresholds to review previously discounted control measures against updated guidance and newly accepted EPs to ensure that risks are continually	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors.	The CM for noise emissions modelling review is incorporated as step within the Campaign Risk review. This control measure is aligned between the EP and OPP.

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	reduced to levels that are ALARP and are of an acceptable level. The assessment of environmental impacts and risks will focus on aspect: subsea noise, and risks to endangered whale species, specifically pygmy blue whales, and southern right whales. A risk review may also be triggered during the offshore campaign where DP nighttime triggers have been exceeded, if ≥ 3 sightings of blue whales or >3 sightings of southern right whales are recorded within the observation zone for 3 consecutive days, or if concerns are raised by a member of the project or community. Risk Reviews during the campaign will be informed by a panel including MFO's experienced in the region, Activity Manager (or delegate), Vessel master (or delegate) and Amplitude Energy HSEC Representative. Recommendations will be managed in accordance with the Amplitude Energy MOC process.		
	EPS15.2: The Cooper Energy Environmental Protocol describes how environmental impact and risk management, including risk assessments, is undertaken for activities including offshore campaigns. As part of pre-campaign planning a risk review (refer Figure 12-6) will be undertaken to re-assess campaign environmental impacts and risks to ensure acceptability criteria are met and that impacts and risks are reduced to ALARP. The risk review will consider aspects relevant to the campaign; where there is a risk that campaign discharges to sea may contain mercury, the risk review will consider the current best	CM20: Campaign Risk Review The Cooper Energy Environmental Protocol describes how environmental impact and risk management, including risk assessments, is undertaken for activities including offshore campaigns. As part of pre-campaign planning a risk review (refer Figure 12-5 of the OPP) will be undertaken to re-assess campaign environmental impacts and risks to ensure acceptability criteria are met and that impacts and risks are reduced to ALARP. The assessment of environmental impacts and risks will focus on aspect: subsea noise, and	

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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	available techniques and environmental practices in order to control releases of mercury.	risks to endangered whale species, specifically pygmy blue whales, and southern right whales	
	EPS15.3: Review analogue light modelling scenarios to ensure that the scenarios and thresholds remain appropriate for the activity.	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors.	This control measure is aligned between the EP and OPP.
	EPS15.4: Review the LoC modelling scenarios to ensure that the modelled scenarios and thresholds are appropriate for the activity.	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors.	This control measure is aligned between the EP and OPP.
	EPS15.5: Each future EP resulting from the East Coast Project OPP will undertake a review for additional or significantly revised reasonably foreseeable projects. Additional or significantly revised projects will be assessed as per CIA methodology (Section 9.0). Any cumulative impacts from new, significantly revised or currently unknown activities that results in an unacceptable level of impact to receptors, will be subject to new or revised control measures within the appropriate EP to reduce cumulative impacts to ALARP.	CM27: Each future EP resulting from the East Coast Project OPP will undertake a review for additional or significantly revised reasonably foreseeable projects. Additional or significantly revised projects will be assessed as per CIA methodology (Section 11.1). Any cumulative impacts from new, significantly revised or currently unknown activities that results in an unacceptable level of impact to receptors, will be subject to new or revised control measures within the appropriate EP to reduce cumulative impacts to ALARP.	This control measure is aligned between the EP and OPP. Section 9.0 of the EP reviews potential future projects as part of the CIA.
CM16: Seabed Survey	EPS16.1: Seabed surveys (geophysical, geotechnical, visual and contaminant sampling) will be undertaken for the purposes of collecting information to manage risks to the Shelf rocky reefs and hard substrates KEF values (high relief outcrops, reefs and sponge beds), sediment	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors.	This control measure is aligned between the EP and OPP. The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	quality, underwater heritage, debris and hazards on the seafloor. Seabed surveys will be undertaken prior to finalising MODU position, location of mooring equipment and finalising wells and subsea infrastructure locations. Relevant survey seabed findings (benthic environment, heritage, hazards) will be included in future EPs if available at the time of preparing EP. In the event unpredicted contaminants are detected Cooper Energy will undertake a human health and environmental risk assessment to ensure ALs and EPOs are met.	Seabed surveys for fields where the seabed has not been characterised will be undertaken prior to well construction activities being undertaken, this will form an input into the Risk Review process described in Section 12.9.	high relief, and is considered a suitable location.
CM17: Offshore Victoria Whale Disturbance Risk Management Procedure	EPS17.1: Active DP thruster management: • MODU and vessel DP thrusters will not be operated with loading outside of DP system Activity Specific Operation Guideline (ASOG) (DP ASOG will require loading not to exceed 70% except as necessary to avoid an emergency).	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors. CM3: Cooper Energy Offshore Victoria Whale Disturbance Risk Management Process. The Cooper Energy Offshore Victoria Whale Disturbance Risk Management Process provides for the environment performance requirements that apply to the East Coast Project which are described in Section 8.2.7 of the OPP. The process provides a framework for minimising noise impacts to whales and details specific measures to be implemented that will ensure impacts and	The EP includes detailed EPS to reflect the implementation of both the modelling review, the campaign risk review and Amplitude Energy's Offshore Victoria Whale Disturbance Risk Management Process. The control measures are aligned between the EP and OPP. Both the EP and OPP commit to applying a monitoring program, adaptive management processes informed by subsea noise modelling and effective communications protocol. The EP further commits to active DP thruster loading aligned with ASOG. The EP includes specific activity detail on specific adaptive management and DP suspension measures of the process. [Including: night time criteria, distances,
	EPS17.2: Marine Mammal Monitoring: • 30-minute pre-start whale observation will be required within the DP observation zone for the activity, before DP operations commence, or nighttime criteria is met for DP operations at night. To be completed by the Dedicated MMO. • Ongoing monitoring for marine mammals throughout daylight hours across the monitoring network, with at least one dedicated MMO available offshore at all times whilst DP operations are happening.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	EPS17.3: DP Observation Zones The DP Observation Zones for the Activity are determined by specialist subsea noise modelling service provider and include: • 8.3 km during MODU on DP during mooring activities. • 500 m during vessel on DP activities.	risks meet acceptable levels described in the OPP. The process acknowledges legislative requirements and establishes the criteria and methods by which potential disturbance to relevant whale species is identified. The process identifies management measures for different types of offshore activity, accounting for nature and scale of the potential impacts and risks, to ensure they remain within acceptable levels, and are managed to ALARP. Provisions within the process include: • Consideration for vulnerable species during sensitive life stages most susceptible to noise emissions via a planning-phase risk review, integrating latest published Government Plans and scientific literature. This will consider scheduling of activities outside of higher sensitivity period where practicable, and review of control measures to ensure levels of impact and risk remain ALARP. The Whale Disturbance Risk Management Process acknowledges legislative requirements and establishes the criteria and methods by which potential disturbance to relevant whale species is identified. The	durations, resourcing, communication, reporting, MMO competency]
	EPS17.4: Marine Mammal Observation Network The observer network for the Activity will comprise: • Dedicated MMO on support vessels, with two MMOs if daylight exceeds 12-hours (sunrise-sunset) to provide continuous observation in daylight hours. There will be at least one MMO within the DP Observation Zone at all times when DP Ops are happening. • Officers of the Watch on support vessels observing as per normal vessel shift patterns and duties; the officer of the watch will provide coverage for the dedicated MMO during normal work breaks. If there is only one dedicated MMO offshore and that MMO is unable to complete their duties, then a second MMO will be mobilised to the DP Observation Zone before DP operations commence • Officers of the Watch on MODU observing as per normal MODU shift patterns and duties. • Helicopter crew (personnel transfers from shore to the MODU) observing opportunistically during over-sea transit. • Observations from other operators working in the region where the information is shared.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• Observations from publicly available Citizen Science.	process identifies management measures for different types of offshore activity, accounting for nature and scale of the potential impacts and risks, to ensure they remain within acceptable levels, and are managed to ALARP. Provisions within the process include consideration for vulnerable species during sensitive life stages most susceptible to noise emissions via a planning phase risk review, integrating latest published Government Plans and scientific literature. This risk review: • will consider scheduling of activities outside of higher sensitivity period where practicable, and review of control measures to ensure levels of impact and risk remain ALARP. • requires the identification and selection of control measures, including new techniques and technologies, where their use is proven, provides benefit, and is practicable for the campaign. The use of new techniques and technologies is informed by research, engaging engagement with expert third parties such as specialist consultants, and participation in industry forums such as the AEP marine noise working group. Section 12.9 (of the OPP) provides a holistic overview of how the process is applied on a	
	EPS17.5: Observation uncertainty: Species confirmation criteria will be developed for blue whale and southern right whale ID, by an experienced MMO (5+ years' experience) and will be provided to the Activity Dedicated MMOs. For crew observers, dedicated MMOs will advise on species where there is uncertainty.		
	EPS17.6: DP Suspension Actions: • Suspension of DP operations (if safe to do so) where a blue or southern right whale is observed within the relevant activity DP Observation Zone. • Suspension of DP operations (if safe to do so) before any whale is observed within the Activity DP TTS zone continuously for 24 hours. *Note: DP TTS Zones are smaller than the DP Observation Zones and are defined in the noise modelling report.* • Adopt favourable heading to reduce thruster load (and associated noise) and slowly increase separation from whale if safe to do so. • Apply 60-minute pre-start observation prior to recommencing activities, from the time the BW or SRW was last observed in the activity DP observation zone. • Night-time criteria: DP operations are to be avoided (if safe to do) so when: 3 or more sightings of blue or southern right whales occurred in the DP Observation Zone within 3-		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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	hours prior to sunset, or a blue or southern right whales are observed within the 30 minutes prior to sunset inside the observation zone and have not been observed leaving the zone. ***Whether it is safe to take action is determined by the person in command of the vessel (i.e. vessel master or their delegate).*	campaign-by-campaign basis to ensure that acceptable levels of impact are not exceeded during that campaign, and accounts for new information, practices and requirements. The process also provides details on: • level of whale observation effort • triggers for actions • actions to be taken to avoid injuring whales and avoid behavioural disturbance to endangered whale species (blue whales and southern right whales), • actions to be taken to ensure any southern right whale is not prevented from utilising BIA's or HCTS • actions to be taken to reduce the risk of displacement of a foraging blue whale, and minimise the risk of disturbance to a southern right whale in a migration and/or reproduction area. The Whale Disturbance Risk Management Process communicates how whale interaction and disturbance risks are to be managed by offshore project teams, and crews on offshore vessels involved in offshore projects. The procedure provides details on the level of whale observation effort, triggers for actions and the actions to be taken to manage potential impacts to whales. This includes caution and no approach zones which meet or exceed	
	EPS17.7: Daily Reporting: A daily MMO report will be issued, consolidating all sightings and actions from across the monitoring network.		
	EPS17.8: MMO Capacity and Competency: • Dedicated Lead MMO minimum experience / competency is multiple offshore campaigns as a marine mammal observer with experience observing blue whale and southern right whale within BIAs (or international equivalent). • At times of year when daylight hours exceed 12-hours, there will be a second dedicated MMO (minimum experience / competency is: at least one offshore campaign as a marine mammal observer, and familiar with the ID features for blue whales and southern right whales. • Dedicated MMOs shall have demonstrated prior experience in the ID of large baleen whales, distance estimation and systems of recording and reporting, and understand the Australian regulatory requirements. • MMOs shall be hired from service providers with expertise in marine mammal observing.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• MMO experience and competency will be reviewed and confirmed by the MMO service provider and checked by Amplitude Energy prior to their mobilisation to monitor a DP Observation Zone. • Vessel Officers of the Watch: the dedicated MMO(s) will be supported by trained bridge crew. Bridge crews will be inducted into Activity requirements and whale ID and will have a high base level of observation experience and competency noting watchkeeping duties are a core competency, and marine mammal observation for collision avoidance and to minimise behavioural disturbance to endangered blue and southern right whales, is applicable to all offshore marine users. • Helicopter Crew: Helicopter crew will complete MMO Program Induction. • MMO Program Inductions - Dedicated MMOs, Vessel and MODU Officers of the Watch, and helicopter crews shall receive an induction including: – overview of the Activity – description of species that are the focus for the program and why – marine mammal monitoring and action requirements – ID criteria for endangered whales – reporting requirements.	regulatory standards under the EPBC Act. Reporting of vessel strike incidents in the National Vessel Strike Database is required and described in Section 12.13. Where there is a risk of TTS or AUD INJ to whales, or a risk of behavioural disturbance to southern right whales or blue whales, the following adaptive management provisions apply: • The extent of potential TTS, Injury and behavioural disturbance are defined through subsea noise modelling by subsea acoustics specialist. • A monitoring program is established to observe for whales within the potential impact areas defined by the modelling. • Monitoring informs activity modification (where safe to do so) to prevent the occurrence of unacceptable levels of impact and reduce the risk of their occurrence. • Monitoring is implemented through conventional methods such as marine mammal observation by trained and competent marine mammal observers, or by other methods and technologies where they have been demonstrated as being effective for mitigation purposes. • Establishment of a communications protocol between monitoring team, vessel master and project team.	
	EPS17.9: The Whale Disturbance Risk Management Procedure will be implemented,		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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	assisting the implementation of CM17. Applicable Provisions within the procedure include: • Establishment of a communications protocol between observers, vessel master and project team. • Dedicated MMO for the hours of daylight (defined as sunset to sunrise). A 2nd MMO where necessary if daylight extends beyond 12-hr period. • Dedicated MMOs shall have demonstrated prior experience in the ID of large baleen whales, distance estimation and systems of recording and reporting. • Inducted crew observers to support dedicated MMO during rest breaks. Reporting of any injured marine mammal to relevant response and regulatory agencies.		
CM18: Other Detection Technologies	EPS18.1: Amplitude Energy will continue to seek other technologies for whale detection through discussions with specialist service providers, other titleholders, and/or participation in the AEP Marine Noise Working Group. Technologies that are identified will be assessed with the campaign risk review panel. Evaluation criterion will include technology readiness, the level of risk reduction (specific to the risk event) afforded by the technology, Activity integration feasibility and costs. Where detection technologies are used, they will be in addition to the MMO program and technology effectiveness will be shared with other operators in the region.	Described in Figure 12-5 of the OPP.	The EP includes this as a specific CM to demonstrate implementation of the Whale Disturbance Risk Management Process.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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CM19: Waste Management Practices	EPS19.1: Vessels and MODU implement a garbage management plan. • The waste hierarchy is applied to project wastes. • Waste with potential to be windblown is contained and restrained. • Waste lost overboard is recorded and recovered if possible. • Waste transfers are recorded.	CM1: Marine Assurance Process MODU and vessels will comply with relevant MARPOL Commonwealth requirements and subsequent Marine Orders for waste management practices.	This CM aligns with the OPP.
CM20: Amplitude Energy IMS Risk Management Protocol	EPS20.1: - Vessels and MODU will comply with the Australian biofouling management requirements and Australian ballast water management requirements. Vessels and MODU biofouling and ballast management histories are used to complete an IMS Risk assessment prior to the vessel arriving within the operational area. Subsequent risk management actions are completed in accordance with the Vessel Biofouling and Ballast Water Management Plans for Low-risk Vessels, or otherwise in accordance with recommendations of a qualified IMS inspector.	CM15: Cooper Energy IMS Risk Management Process The Cooper Energy IMS Risk Management Process acknowledges legislative requirements and the different sources of IMS risk for different types of project activity. The Process details the regulatory and any additional company requirements to manage biofouling and ballast water risks to levels that are acceptable and ALARP.	Both the EP and OPP commit to implementing the IMS risk management process. The EP commits to completing this prior to the vessel arriving within the operational area and completing actions in alignment with the Vessel Biofouling and Ballast Water Management Plans. Section 12.9 and Figure 11.5 in the EP describe IMS Risk Management.
CM21: Activity Fire Fighting Foam Screening and Quarantine Standard	EPS21.1: From 01 July 2025, firefighting foams for well construction activities (i.e. response standby Aqueous Film Forming Foam (AFFF) for the well test package) will not contain PFOS, PFOA, PFHxS and related substances in compliance with IChEMS (Schedule 7). Firefighting foam SDS will be screened for these substances; any firefighting foams that do not comply with this requirement as of 01 July 2025 will not be used or stored offshore, or, if any	Not described in OPP.	Additional control incorporated from the approved Athena Supply Project EP.

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	legacy products are found offshore, they will be quarantined.		
CM22: NOPSEMA Accepted WOMP	EPS22.1: A NOPSEMA-accepted WOMP. The WOMP includes, as applicable to the activity: • Amplitude Energy well management standards detailing how well integrity will be managed over the well life cycle. • A description of well barriers. • Performance and testing criteria.	CM14: Facility Safety and Integrity Management Plans Under Part 5 of the OPGGS (Resource Management and Administration) Regulations 2011, a NOPSEMA accepted WOMP (including Cooper Energy Well Management System) and a Safety Case is required before well activities can be undertaken. The WOMP details the well barriers and the integrity testing that will be in place for the activity.	OPP and EP align on the control measure of accepted WOMP.
CM23: NOPSEMA Accepted Safety Cases	EPS23.1: Activities will be managed in accordance with the accepted safety case revisions.	CM14: Facility Safety and Integrity Management Plans A NOPSEMA accepted safety case is required before any development activities can be undertaken. All activities will be managed in accordance with accepted safety cases.	OPP and EP align on the control measure of accepted Safety Case Revisions.
CM24: Source Control Emergency Response Plan	EPS24.1: Source control capability is maintained in accordance with the SCERP. Source control response activities will be implemented in accordance with the SCERP.	CM19: Source Control Emergency Response Plan The Cooper Energy source control emergency response plan (SCERP) acknowledges legislative requirements and provides in detail the company's plans, equipment and personnel provisions to enable a source control response, commensurate to the risk at each stage of a wells life cycle from initial drilling to closing off the reservoir.	OPP and EP include control measure of a SCERP for the drilling activity.
CM25: Oil Pollution Emergency Plan (OPEP)	EPS25.1: Emergency spill response capability is maintained in accordance with the OPEP. Emergency response activities will be implemented in accordance with the OPEP.	CM17: OPEP Under the Regulations, the petroleum activity must have an accepted Oil Pollution Emergency Plan (OPEP) in place before the activity commences. In the event	The OPEP is attached to the EP submission. The EP includes an assessment of the proposed oil spill response strategies for the activity (refer Section 7).

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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		of a subsea LOWC, the OPEP will be implemented. Cooper Energy acknowledges that any response will be implemented in accordance with the requirements described within the OPEP.	
CM26: Operational and Scientific Monitoring Plan (OSMP)	EPS26.1: Operational and scientific monitoring will be implemented in accordance with the OSMP.	CM16: OSMP Cooper Energy's OSMP details the arrangements and capability in place for: • operational monitoring of a hydrocarbon spill to inform response activities • scientific monitoring of environmental impacts of the spill and response activities	OPP and EP align on the OSMP.
CM27: Amplitude Energy Decommissioning Protocol	EPS27.1: Amplitude Energy will meet the requirements of Section 572 ('Maintenance and removal of property etc. by titleholder') of the OPGGS Act. • If Annie-2 development well does not access a commercially viable resource following well testing, it will be abandoned at the time of well evaluation and within the well activity duration of this EP • The Annie 2 development well will be permanently abandoned within 3 years in the event the well is not tied into the existing CHN pipeline, or as accepted in the governing WOMP where integrity can be demonstrated as per regular inspection and/ or monitoring activities. • Annie-2 will be permanently abandoned within 3 years of permanently ceasing	CM10: Implement Cooper Energy's Decommissioning Protocol The Cooper Energy Decommissioning Protocol acknowledges legislative requirements and illustrates the company's management system for integrating decommissioning planning and provisioning through a project's life cycle.	OPP commits to implementation of the Decommissioning Protocol to integrate decommissioning planning to projects. EP CM29 EPS8 commits to meeting Section 572 of the OPGGS Act unless an alternative is accepted.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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	production or as accepted in the governing WOMP where integrity can be demonstrated as per regular inspection and/ or monitoring activities. • All well equipment on the seabed will be recovered.		
CM28: Retrieval of dropped objects were practicable	EPS28.1: If practicable to do so, objects accidentally dropped to the seabed will be retrieved.	Not described in OPP.	Additional control incorporated from the approved Athena Supply Project EP.
CM29: Engagement During Emergency Response	EPS29.1: Engagement with relevant First Nations Representatives in the event of a loss of containment of hydrocarbons which may extend to coastlines to obtain advice on the management of cultural sensitivities which may be in the spill trajectory.	Not described in OPP.	Additional control incorporated from the approved Athena Supply Project EP.
CM30: Underwater Cultural Heritage Disturbance Risk Management Measures	EPS30.1: Amplitude Energy will ensure the activity is compliant with the Underwater Cultural Heritage Act 2018 (Underwater Heritage Act) by: • Seabed survey data will be reviewed prior to well construction activities and used to inform equipment laydown locations to avoid impacts to underwater cultural heritage. • Review of relevant seabed survey data will be conducted by a suitably qualified and experienced cultural heritage team. The team will include a marine archaeologist, have familiarity with First Nations cultural landscapes and experience in identifying landscape features from geophysical data. • If cultural heritage is identified, it will be mapped, along with suitable exclusion zone and its location integrated into Activity	CM9: Underwater Cultural Heritage Disturbance Risk Management Measures Cooper Energy Cultural Heritage Disturbance Risk Management Measures acknowledge legislative requirements and establishes the methods by which potential disturbance to cultural heritage is identified including via screening, consultation, and expert advice as required. The measures apply to the offshore project to ensure impacts and risks throughout the project remain within acceptable levels and are managed to ALARP. Cooper Energy will ensure the activity is compliant with the Underwater Cultural Heritage Act 2018 (Underwater Heritage Act) by: • Seabed survey data will be reviewed prior to well construction activities and used to	OPP and EP align on Underwater Cultural Heritage Disturbance risk management.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	inductions and procedures to ensure it is avoided during Activity. • UCH Review Report will be provided to relevant RAP. • Implementing a process for reporting and managing unexpected finds during the activity, including reporting of any new suspected underwater cultural heritage to DCCEEW (or delegate) within 21 days of discovery.	inform equipment laydown locations to avoid impacts to underwater cultural heritage. • Review of relevant seabed survey data will be conducted by a suitably qualified and experienced cultural heritage team. The team will include a marine archaeologist, have familiarity with First Nations cultural landscapes and experience in identifying landscape features from geophysical data. • If cultural heritage is identified, it will be mapped, along with suitable exclusion zone and its location integrated into Activity inductions and procedures to ensure it is avoided during Activity. • UCH Review Report will be provided to relevant RAP. • Implementing a process for reporting and managing unexpected finds during the activity, including reporting of any new suspected underwater cultural heritage to DCCEEW (or delegate) within 21 days of discovery.	
Control Measures not incorporated into the Annie 2 Development Drilling EP (This EP)			
CM5: Cooper Energy Emissions Management Process	Not Applicable to the Annie 2 Development EP	CM5: Cooper Energy Emissions Management Process. The Cooper Energy Emissions Management Process acknowledges legislative requirements and establishes a systematic process to identify, assess and implement GHG emissions reduction opportunities throughout a project's life cycle. The process sets a continual	These controls are relevant to the Operations phase of the East Coast Supply Project, and will be incorporated accordingly in the revision to the Otway Operations Environment Plan ahead of production from Annie-2 development well.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
		improvement cycle such that new technologies and approaches can be incorporated as they are developed. The objectives of the Emissions Management Process are to: • Identify requirements relating to GHG emissions reduction. • Provide a framework for identifying, assessing and implementing emissions reduction opportunities. • Align emissions reduction activities with other business processes.	
	Not Applicable to the Annie 2 Development EP	CM23: Safeguard Mechanism Monitoring Direct and indirect GHG emissions will be monitored throughout the project lifecycle against the threshold established by the Safeguard Mechanism. Liaison with the Clean Energy Regulator will be undertaken if the likelihood of triggering the Safeguard Mechanism becomes apparent.	
	Not Applicable to the Annie 2 Development EP	CM26: NGER Scheme Reporting Operational control-based reporting as part of the national reporting framework for greenhouse gas emissions, energy consumption and energy production to meet the objectives of the NGER Act.	

Table 14-3 summarises the concordance of the proposed Annie-2 development well activities with the activities described in **ECSP OPP**.

The East Coast Project described and approved in the **ECSP OPP**, comprises up to 8 incremental gas development opportunities with associated wells, flowlines and manifolds, which will tie-in to the existing Otway Casino-Henry-Netherby (CHN) Development (known as the 'existing CHN facilities').

The Annie-2 development well EP includes the following phases as described in the OPP (refer Section 4 of **ECSP OPP**):

- Well construction – activities include Mobile Offshore Drilling Unit (MODU) positioning, all drilling operations, blowout preventer (BOP) installation, cementing, subsea trees and completions, clean-up and flowback, well suspension and logging. Only one well is drilled at a time. Multi-well drilling campaigns involve one MODU which drills each well, one well after another (section 4.3.2 of the **ECSP OPP**).
- Support activities – including MODU operations, vessel operations, remotely operated vehicle (ROV) and helicopter operations. Vessel types include saturation diving support vessel, installation vessels, heavy lift vessels (HLV's) and general support vessels for Inspection, Maintenance and Repair (IMR) type activities or supporting the engineering or execution programs. ROV operations may also include autonomous underwater vehicles (AUVs) (section 4.3.6 of the **ECSP OPP**).
- Surveys – activities include geophysical and geotechnical surveys of the proposed locations (section 4.3.1 of the **ECSP OPP**).
- Decommissioning – activities include well abandonment and the decommissioning of infrastructure (contingency in event Annie 2 is not tied into CHN facilities) (Section 4.3.5 of the **ECSP OPP**).

Table 14-3: Concordance of East Coast Supply Project OPP Activity Description and Annie-2 Development Drilling EP Activity Description

Activity	**EP Concordance**
Location/ Operational Area	Annie is a confirmed resource described in the OPP. Annie 2 is within the operational footprint described in the **ECSP OPP**, refer Section 4.1.1 of the **ECSP OPP**. The cautionary zone in the EP has been increased from 3km as described in the EP to 3.5km. This is based on the 2.5km anchor/ mooring spread, and a 1km buffer. The increase in the size does not change the risk described for in the OPP in regards potential impacts to other marine users, given that the cautionary zone issued via AusCoast warning from AMSA is typically set at 2.5nM (4.6km).
Activity Duration and Timing	The timing described in Section 3.2 of the EP is consistent with Section 4.1.2 of the **ECSP OPP**. Amplitude Energy are progressing with the development of the Annie field as described in the **ECSP OPP**. Annie 2 will be drilled as early as Q2 2026, the **ECSP OPP** Figure 4-3 indicates activities in 2026.
Direct Disturbance Corridor	Table 6-6 of the EP is consistent with Section 4.1.2 of the **ECSP OPP**. Activity durations depicted in Figure 4-2 of the **ECSP OPP** are consistent with Figure 3-3 of the EP.

Activity	EP Concordance
Production & Field Characteristics	The reservoir conditions and gas components for the Annie field and proposed Annie 2 well are consistent, refer Table 4-3 of the **ECSP OPP** and Table 3-3cof this EP.
Description of Activities	Section 3.4 of the EP described the key activities for the Annie 2 development well, which is one of the 15 subsea production wells described for in section 4.2.2 of the **ECSP OPP**. This EP does not include for installation of flowline and umbilical systems (section 4.2.3 & 4.2.4 of the **ECSP OPP**), installation of other subsea infrastructure (section 4.2.5 of the **ECSP OPP**), the tie in, commissioning and operation of the subsea facilities, these will be the subject of future environment plans. The activity description is consistent with the **ECSP OPP**, with this being a single well campaign with an estimated duration of 60 days (section 4.3.2 of the **ECSP OPP**). As described in the **ECSP OPP**, if successful, once completed the Annie-2 development well will be suspended and monitored in accordance with the WOMP ahead of tie in, commissioning and operations activities (separate environment plans). The drilling of Annie-2 well does not require the contingent use of Synthetic Based drilling fluids (SBDF), as such commitments for the use and management of SBDF have not been included in this EP. Support activities described in Section 3.4.5 of the EP are consistent with those described in section 4.3.6 of the **ECSP OPP**. Section 3.4.6 of the EP is consistent with section 4.3.5 of the **ECSP OPP** in regards plug and abandonment of the Annie 2 well.

Appendix 2 - EP Change Register

Date	Rev	Originator	Section Changed	Change	MOC#	Trigger Resubmission?
11.09.25	0	SM	n/a	Original submission	n/a	No

Appendix 3 - Environment Regulations Requirements

Appendix 4 - Description of the Environment

Appendix 5 - EPBC Database Protected Matters Search

Appendix 5a - Operational Area EMBA PMST

Appendix 5b – Ecological LOWC EMBA PMST

Appendix 5c – Light EMBA PMST

Appendix 5d – MDO EMBA PMST

Appendix 5e – Monitoring Area PMST

Appendix 5f – Noise EMBA PMST

Appendix 5g – Social EMBA PMST

Appendix 6 - Oil Spill Trajectory Modelling

Appendix 7 - Subsea Noise Modelling

Appendix 8 - Relevant Persons Consultation Report

Table 14-1: Comparison of Annie-2 Development Drilling EP EPOs and those of the East Coast Supply Project OPP

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
Atmospheric Emissions	EPO1: Manage atmospheric emissions generated by activities defined in this OPP in accordance with MARPOL Annex VI (Prevention of Air Pollution from Ships) enacted in the Navigation Act 2012, with no impacts to amenity outside of the operational area.	EPO13: Manage atmospheric emissions generated by activities defined in this EP in accordance with MARPOL Annex VI (Prevention of Air Pollution from Ships) enacted in the Navigation Act 2012, with no impacts to amenity outside of the operational area.	No change in the EPO wording - vessel activity is a key activity of the Annie-2 drilling EP.
Drilling Discharges	EPO2: Undertake drilling discharges management processes to reduce as far as practicable the overall volumes of WBDF discharged to the marine environment.	EPO2: Undertake drilling discharges management processes to reduce as far as practicable the overall volumes of WBDF discharged to the marine environment.	No change in the EPO wording.
	EPO3: Contingent use of SBDF only where technically required.	Not included.	This EPO is not included in the EP, as the activity description does not describe the use or contingent use of SBDF. There is no requirement to use SBDF for drilling the Annie-2 well.
	EPO4: Only approved chemicals (which meet low ecotoxicity pre-screening criteria or are further justified as ALARP) will be discharged to sea within project discharges.	EPO3: Only approved chemicals (which meet low ecotoxicity pre-screening criteria or are further justified as ALARP) will be discharged to sea within project discharges.	No change in the EPO wording. This is an Amplitude Energy standard.
	EPO5: Use solids control equipment, when drilling with riser installed, to recover and limit discharge of excess drilling fluids (and SBDF on cuttings) to the environment.	EPO4: Use solids control equipment, when drilling with riser installed, to recover and limit discharge of excess drilling fluids (and SBDF on cuttings) to the environment.	EPO remains the same The Activity description precludes the use of SBDF (refer Table 6-2 – Planned discharges) for the Activity, so reference to SBDF has been removed from the EPO as it is not relevant to the Activity. This EPO is equivalent to the OPP.
	EPO6: Manage discharge of residual bulks materials to the marine environment in accordance with Cooper Energy's residual bulks management process.	EPO5: Manage discharge of residual bulks materials to the marine environment in accordance with Amplitude Energy's residual bulks management process. No bulk discharge of SBDF.	EPO remains the same The Activity description precludes the use of SBDF (refer Table 6-2 – Planned discharges) for the Activity, so reference to SBDF has been

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
			removed from the EPO as it is not relevant to the Activity. This EPO is equivalent to the OPP.
	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.
	EPO10: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable; • not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018.	EPO6: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable; • not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018.	No change in the EPO wording.
	EPO11: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	EPO8: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	No change in the EPO wording. *Note - The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location.*
	EPO12: Seabed disturbance is limited to the planned disturbance areas defined in this OPP and within the Operational Area.	EPO9: Seabed disturbance is limited to the planned disturbance areas defined in this EP and within the operational area.	No change in the EPO wording. This is first activity under the OPP with an estimated disturbance of 1.32km^2. This is less than the total disturbance estimated for the Project - 20.4km^2. The disturbance areas included in Table 6-6 for this activity are equivalent for disturbance as described in the OPP - Table 8-63.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
Operational Discharges	EPO4: Only approved chemicals (which meet low ecotoxicity pre-screening criteria or are further justified as ALARP) will be discharged to sea within project discharges.	EPO3: Only approved chemicals (which meet low ecotoxicity pre-screening criteria or are further justified as ALARP) will be discharged to sea within project discharges.	No change in the EPO wording. This is an Amplitude Energy standard.
	EPO7: Planned vessel/ MODU discharges will meet AMSA Discharge Standards for operating in Australian waters.	EPO7: Planned vessel/ MODU discharges will meet AMSA Discharge Standards for operating in Australian waters.	No change in the EPO wording. Vessel and MODU activity is a key activity of the Annie-2 drilling EP.
	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.
Seabed Disturbance	EPO10: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable; • not disturb underwater heritage as defined under the *Underwater Cultural Heritage Act 2018*.	EPO6: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable; • not disturb underwater heritage as defined under the *Underwater Cultural Heritage Act 2018*.	No change in the EPO wording.
	EPO11: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	EPO8: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	No change in the EPO wording. *Note - The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location.*
	EPO12: Seabed disturbance is limited to the planned disturbance areas defined in this OPP and within the Operational Area.	EPO9: Seabed disturbance is limited to the planned disturbance areas defined in this OPP and within the Operational Area.	No change in the EPO wording. This is first activity under the OPP with an estimated disturbance of 1.32km^2. This is less than the total disturbance estimated for the Project - 20.4km^2.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
			The disturbance areas included in Table 6-6 for this activity are equivalent for disturbance as described in the OPP - Table 8-63.
	EPO13: No unplanned release of waste to the marine environment.	EP20: No unplanned release of waste to the marine environment.	No change in the EPO wording.
	EPO14: No introduction, establishment or spread of invasive marine species.	EPO21: No introduction, establishment or spread of invasive marine species.	No change in the EPO wording.
	EPO19: Impacts to commercially targeted species will be limited to temporary[3] and localised[3] change in fauna behaviours. [3] *Temporary and localised change in fauna behaviours for commercially targeted species limited to activity durations and seabed disturbance footprint defined in Section 6.3.2*	EPO10: Impacts to commercially targeted species will be limited to temporary[3] and localised[3] change in fauna behaviours. [3] *Temporary and localised change in fauna behaviours for commercially targeted species limited to activity durations and seabed disturbance footprint defined in Section 8.8.2 (of the OPP).*	No change in the EPO wording.
	EPO24: No impact to underwater cultural heritage	EPO23: No impact to underwater cultural heritage.	No change in the EPO wording.
	EPO25: Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within EPs for the activity.	EPO11: Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within EPs for the activity.	No change in the EPO wording.
Light Emissions	EPO9: Artificial light generated by the Activity will be managed to ensure biologically important behaviours of light-sensitive species that occur within the Activity light EMBA can continue while project activities are being undertaken, by applying relevant measures from the National Light Pollution Guidelines for Wildlife (DCCEEW,	EPO12: Artificial light generated by the Activity will be managed to ensure biologically important behaviours of light-sensitive species that occur within the Activity light EMBA can continue while project activities are being undertaken, by applying relevant measures from the National Light Pollution Guidelines for Wildlife (DCCEEW	No change in the EPO wording.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
	2023k), whilst meeting lighting requirements for safe navigation and work at night.	2023), whilst meeting lighting requirements for safe navigation and work at night.	
GHG Emissions	EPO15: GHG emissions related to the Project, including (scope 1 [Inside Project Boundary], scope 1* [Outside Project Boundary] and scope 3) emissions are consistent with Australia's international GHG emissions commitments, as outlined in the Climate Change Act 2022. Emissions are to be determined based on the NGER scheme and managed by the Safeguard Mechanism.	EPO13: GHG emissions related to the Project, including (scope 1 [Inside Project Boundary], scope 1* [Outside Project Boundary] and scope 3) emissions are consistent with Australia's international GHG emissions commitments, as outlined in the Climate Change Act 2022. Emissions are to be determined based on the NGER scheme and managed by the Safeguard Mechanism.	No change in the EPO wording. .
Underwater Sound Emissions (Impulsive & Continuous)	EPO16: Impacts to marine fauna from underwater anthropogenic noise emissions will be limited to temporary* behavioural change localised** to the noise source. **Not exceeding the duration of the activity component (i.e. vessel campaign) (described in Section 3.2)* ***Not exceeding the noise EMBA defined for the activity (described in Sections 6.5 and 6.6)*	EPO14: Impacts to marine fauna from underwater anthropogenic noise emissions will be limited to temporary* behavioural change localised** to the noise source. **Not exceeding the duration of the activity component (i.e. vessel campaign) (described in Section 8.1.2 and 8.2.2 of the OPP).* ***Not exceeding the noise EMBA defined for the activity (described in Section 8.1.5 and 8.2.5 of the OPP)*	No change.
	EPO17: No death or injury[1] to EPBC Act listed threatened, migratory or cetacean species. [1]*Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*	EPO15: No death or injury[1] to EPBC Act listed threatened, migratory or cetacean species. [1]*Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*	No change in the EPO wording.
	EPO18: Project related underwater noise within biologically important areas[1] and habitat critical to the	EPO16: Project related underwater noise within biologically important areas[1] and habitat critical to the survival of	No change in the EPO wording.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
	survival of relevant species will be managed through the implementation of Cooper Energy Offshore Victoria Whale Disturbance Risk Management Process, such that: • Any blue whale continues to utilise biologically important areas without injury and is not displaced from a foraging area. • Southern right whales are not prevented from utilising biologically important areas[2] or habitat critical to the survival of a species or cause auditory impairment[1]. • The risk of behavioural disturbance to southern right whales will be limited to temporary behavioural disturbance of individuals. [1]*Biologically important behaviours such as reproduction, feeding, migration and resting (DCCEEW, 2023).* [2]*Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*	relevant species will be managed through the implementation of Amplitude Energy Offshore Victoria Whale Disturbance Risk Management Process, such that: • Any blue whale continues to utilise biologically important areas without injury and is not displaced from a foraging area. • Southern right whales are not prevented from utilising biologically important areas[2] or habitat critical to the survival of a species or cause auditory impairment[1]. • The risk of behavioural disturbance to southern right whales will be limited to temporary behavioural disturbance of individuals. [1]*Biologically important behaviours such as reproduction, feeding, migration and resting (DCCEEW 2023).* [2]*Injury to cetaceans as defined as either auditory impairment (TTS or PTS) (DAWE 2021) or auditory injury (AUD INJ) i.e. Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (Houser 2021; Finneran 2024). Auditory injury may or may not result in a permanent threshold shift (PTS).*	
	EPO20: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable.	EPO17: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable.	No change in the EPO wording. Sections 6.5 and 6.6 of the EP has been based on activity specific modelling undertaken to support the development of this EP. Where undertaken, the modelling includes for appropriate scenarios and thresholds to determine the worst case potential impacts to marine fauna.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
Interaction with Other Marine Users	EPO22: Implement Fisheries Damages Protocol to provide a compensation mechanism to fishers who damage fishing equipment on East Coast Project infrastructure outside of the PSZ.	EPO18: Implement Fisheries Damages Protocol to provide a compensation mechanism to fishers who damage fishing equipment on Activity infrastructure outside of the PSZ.	EPO remains the same This EP is specific to the Annie-2 development well and xmas tree. The EPO has been amended accordingly. This is the equivalent of the OPP EPO – which describes East Coast Project infrastructure.
	EPO23: No unplanned interactions between the project vessels and other marine users.	EPO24: No unplanned interactions between the project vessels and other marine users.	No change in the EPO wording.
Loss of Material or Waste Overboard	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.
Interaction with Marine Fauna	EPO21: No vessel strikes with EPBC Act listed threatened, migratory or cetacean species	EP22: No vessel strikes with EPBC Act listed threatened, migratory or cetacean species	No change in the EPO wording.
Introduction, Establishment & Spread of IMS	EPO14: No introduction, establishment or spread of invasive marine species	EPO21: No introduction, establishment or spread of invasive marine species	No change in the EPO wording.
Accidental Release MDO	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO19: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.
	EPO20: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable	EPO17: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable	No change in the EPO wording. Section 6.8 of the EP has been based on activity specific modelling undertaken to support the development of this EP. Where undertaken, the modelling includes for appropriate scenarios and thresholds to determine the worst case potential impacts to marine fauna.
Accidental Release LOWC	EPO8: No unplanned release of chemicals or hydrocarbons to the marine environment.	EPO11: No unplanned release of chemicals or hydrocarbons to the marine environment.	No change in the EPO wording.

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
	EPO20: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable	EPO17: For activity specific environment plans undertake review of modelling and impact/ risk assessment to ensure modelled scenarios, applied thresholds, and impacts and risks to marine fauna provide valid and appropriate predictions, and demonstrate that the levels of impact will be acceptable	No change in the EPO wording. Section 6.8 of the EP has been based on activity specific modelling undertaken to support the development of this EP. Where undertaken, the modelling includes for appropriate scenarios and thresholds to determine the worst case potential impacts to marine fauna.
First Nations Cultural Heritage Values and Sensitivities	EPO10: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • avoid areas of high relief outcrops, reefs, and sponge beds, where practicable. • not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018.	EPO6: The selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts will: • Avoid areas of high relief outcrops, reefs, and sponge beds, where practicable. • Not disturb underwater heritage as defined under the Underwater Cultural Heritage Act 2018.	No change in the EPO wording.
	EPO11: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	EPO8: Undertake Seabed Surveys to inform the selection of the location for wells, flowline paths, mooring and other infrastructure and associated planned impacts, including potential changes to seabed quality.	No change in the EPO wording. *Note - The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of high relief, and is considered a suitable location.*
	EPO12: Seabed disturbance is limited to the planned disturbance areas defined in this OPP and within the Operational Area.	EPO20: Seabed disturbance is limited to the planned disturbance areas defined in this EP and within the operational area.	No change in the EPO wording. This is first activity under the OPP with an estimated disturbance of 1.32km^2. This is less than the total disturbance estimated for the Project - 20.4km^2. The disturbance areas included in Table 6-6 for this activity are equivalent for

Aspect	ECSP OPP EPO	Annie-2 Development Drilling EP EPO	Evaluation of Change (where applicable)
			disturbance as described in the OPP - Table 8-63.
	EPO24: No impact to underwater cultural heritage	EPO23: No impact to underwater cultural heritage	No change in the EPO wording.
	EPO25: Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within EPs for the activity.	EPO11: Undertake Ongoing Engagement with relevant First Nations groups to ensure identified tangible and intangible cultural heritage and potential risks to cultural heritage values remains current and its protection is provided for within the EP for the Activity.	No change in the EPO wording.

Table 14-2: Comparison of Annie-2 Development Drilling EP Control Measures and those of the East Coast Supply Project OPP

Annie 2 Development EP		**Equivalent CM described in the East Coast Supply Project OPP**	**Comments**
Control	**EPS**		
CM01: Marine exclusion and caution zones	EPS1.1: Marine exclusion and caution zones will not exceed distances required for safe operations. These zones, where established, will extend only as far as: • A temporary 3.5 km exclusion / cautionary zone around the MODU during the Activity, established via Notice to Mariners. • A temporary 500 m safety exclusion zone around activity vessels established via Notice to Mariners. • A 500 m PSZ gazetted around well, marked on navigational charts for awareness.	CM12: Marine exclusion, caution and petroleum safety zones May include: • A temporary 3 km cautionary zone around the MODU during the drilling program. • A temporary 500 m exclusion/caution zones to be established via Notice to Mariners around vessels undertaking petroleum activities. • PSZs will be gazetted around wells and other equipment where required for equipment integrity management. Subsea infrastructure will be marked on navigational charts for awareness.	Both include application of: • exclusion / cautionary zone around the MODU, and PSZ • temporary 500m safety zone around activity vessels (including MODU) • PSZ around Annie 2 development well once drilling completed. The cautionary zone for Annie-2 Development well, extends to 3.5km, given the mooring spread from the MODU and a 1km buffer. The control measure for 500m exclusion/caution zones to be established via Notice to Mariners around vessels undertaking petroleum activities. A PSZ will be in place for Annie 2 well once the MODU departs.
CM02: Pre-start notifications	EPS2.1: AHO will be notified of activities where vessels will be in the Operational Area no less than 4 weeks to allow generation of Notice to Mariners (NTM). EPS2.2: AMSA's JRCC will be notified 24–48 hours before operations commence to enable AMSA to distribute an AUSCOAST warning. AMSA JRCC will be notified at the end of activities.	CM12: Marine exclusion, caution and petroleum safety zones May include: • A temporary 500 m exclusion/caution zones to be established **via Notice to Mariners** around vessels undertaking petroleum activities.	Both include notifications to AHO and AMSA - Notice to Mariners & AUSCOAST warning. Note: EP includes an uplift through: • EPS2.1 to notify AHO no less than 4 weeks ahead of vessels entering the Operational area • EPS2.2 for timings and specifics of JRCC notifications
CM03: Marine Assurance Process	EPS3.1: The vessels and MODU will meet navigational safety requirements under the Navigation Act 2012 and associated Marine Orders, including but not limited to:	CM1: Marine Assurance Process. The vessels and MODU will adhere to navigational safety requirements under the	CM1 encompasses the relevant controls that vessels (including MODU) implement to meet the requirements of the Navigation Act 2012, and AMSA Marine Orders as relevant to the

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• AMSA MO 21: Safety and emergency arrangements gives effect to SOLAS regulations dealing with life-saving appliances and arrangements, safety of navigation and special measures to enhance maritime safety. • AMSA MO 27 - Safety of Navigation and Radio Equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards • AMSA MO 30 - Prevention of collisions requires that onboard navigation, radar equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards. • AMSA MO 70 - Seafarer certification meets the requirements for qualifications and training.	Navigation Act 2012 and associated Marine Orders, including but not limited to: • AMSA MO 21 – Safety and Emergency Arrangements • AMSA MO 27 - Safety of Navigation and Radio Equipment • AMSA MO 30 - Prevention of Collisions. • AMSA MO 31: SOLAS and non-SOLAS certification The MODU and vessels operating in the operational area will be required to adhere to navigations safety requirements. AMSA Marine Orders 21 and 30 for the safety of navigation and prevention of collisions require that onboard navigation, watchkeeping, radar equipment, and lighting meets the International Rules for Preventing Collisions at Sea (COLREGs) and industry standards.	size of the vessels. Each EPS pertains to different controls from the Navigation Act 2012, and AMSA Marine Orders that manage potential environment risk associated with this Activity. EPS 3.1 aligns with the OPP.
	EPS3.2: The vessels and MODU will adhere to navigational safety requirements under the Navigation Act 2012 and associated Marine Orders, including but not limited to: • AMSA Marine Order 31 - SOLAS and non-SOLAS certification requires that vessels undertaking Annie 2 development well activities will have in date certification in accordance with AMSA Marine Order 31 (Vessel surveys and certification). • AMSA MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances – requires that vessels undertaking Annie 2	CM1: Marine Assurance Process All vessels contracted will meet survey, maintenance and certification of regulated Australian vessels as per AMSA MO 91 and MO 93.	EPS 3.2 aligns with the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	development well activities will have emergency plans to address pollution events (including containment and clean up) involving noxious liquids.		
	EPS3.3: Vessels will comply with Marine Orders – Part 97: Marine Pollution Prevention – Air Pollution (appropriate to vessel class) for emissions from combustion of fuel including: • Hold a valid International Air Pollution Prevention (IAPP) certificate and have a current international energy efficiency certificate. • Have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI. • Engine NOx emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI. • Sulphur content of diesel/fuel oil complies with Marine Order Part 97 and Regulation 14 of MARPOL 73/78 Annex VI.	CM1: Marine Assurance Process Vessels and MODU operating in the operational area will comply with AMSA Marine Order 97 Marine Pollution Prevention – Air Pollution (appropriate to vessel class) for emissions from combustion of fuel including: • Hold a valid International Air Pollution Prevention (IAPP) certificate. • Engine NOx emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI. • Sulphur content of diesel/fuel oil complies with Marine Order Part 97 and Regulation 14 of MARPOL 73/78 Annex VI • Hold a current international energy efficiency certificate. • Have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI. .	EPS 3.3 aligns with the OPP.
	EPS3.4: All discharges will comply with relevant MARPOL 73/78, Navigation Act 2012, Protection of the Sea (Prevention of Pollution) Act 1983 and subsequent Marine Order requirements (as appropriate for vessel classification): • 2017 Guidelines for the Implementation of MARPOL Annex V to assist shipowners,	CM1: Marine Assurance Process All wastewater discharges will comply with relevant MARPOL 73/78, Navigation Act 2012, Protection of the Sea (Prevention of Pollution) Act 1983 and subsequent Marine Order requirements (as appropriate for vessel classification): • AMSA MO 91 - Marine Pollution Prevention (Oil)	EPS 3.4 aligns with the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	masters and crews in applying the Annex V discharge requirements. • AMSA MO 91 - Marine Pollution Prevention (Oil) • AMSA MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances • Bilge water treated via a MARPOL (or equivalent) approved oily water separator and only discharge if oil content less than 15 ppm.	• AMSA MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances • AMSA MO 96 - Marine Pollution Prevention (Sewage).	
	EPS3.5: In accordance with MARPOL Annex I and AMSA MO 91 [Marine Pollution Prevention – oil], a Shipboard Marine Pollution Emergency Plan (SMPEP) or Shipboard Oil Pollution Emergency Plan (SOPEP) (according to class) is required to be developed. To prepare for a spill event, the SMPEP/SOPEP details: • Response equipment available to control a spill event. • Review cycle to ensure that the SMPEP/SOPEP is kept up to date. • Testing requirements, including the frequency and nature of these tests. In the event of a spill, the SMPEP/SOPEP details: • Reporting requirements and a list of authorities to be contacted. • Activities to be undertaken to control the discharge of hydrocarbon. Bunkering / bulk liquids will be transferred in accordance with operational procedure(s) to reduce the risk of an unintentional release to sea during transfer.	CM1: Marine Assurance Process Vessels shall meet the AMSA Marine Order (MO) requirements, including: • AMSA MO Part 91: Marine Pollution Prevention – Oil In accordance with MARPOL Annex I and AMSA MO 91 [Marine Pollution Prevention – oil], a SMPEP or SOPEP (according to class) is required for each vessel and MODU. Response equipment will be available in accordance with the SMPEP / SOPEP. Training and testing will be undertaken in accordance with the SMPEP/SOPEP exercise schedule. In the event of a spill, the SMPEP/SOPEP details: • Reporting requirements and a list of authorities to be contacted. • Activities to be undertaken to control the discharge of hydrocarbon. CM2: Offshore Operational Procedures In accordance with MARPOL Annex I and AMSA	EPS 3.5 aligns with the OPP, and incorporates the requirements detailed in CM1 and CM2 of the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
		MO 91 [Marine Pollution Prevention – oil], a Shipboard Marine Pollution Emergency Plan (SMPEP) or Shipboard Oil Pollution Emergency Plan (SOPEP) (according to class) is required to be developed. To prepare for a spill event, the SMPEP/SOPEP details: • response equipment available to control a spill event. • review cycle to ensure that the SMPEP/SOPEP is kept up to date and • review cycle to ensure that the SMPEP/SOPEP is kept up to date and • testing requirements, including the frequency and nature of these tests. In the event of a spill, the SMPEP/SOPEP details: • reporting/ notification requirements and a list of authorities to be contacted. • activities to be undertaken to control the discharge of hydrocarbon. Bunkering / bulk liquids will be transferred in accordance with operational procedure(s) to reduce the risk of an unintentional release to sea during transfer.	
	EPS3.6: The vessels and MODU will meet AMSA MO 95 - Marine Pollution Prevention (Garbage), MARPOL 73/78 Annex V which requires that a garbage management plan and garbage record book is in place and implemented to manage waste offshore. Requirements include: • segregating waste on the MODU / vessels	CM1: Marine Assurance Process MODU and vessels will comply with relevant MARPOL Commonwealth requirements and subsequent Marine Orders for waste management practices.	EPS 3.6 aligns with the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• storing solid wastes in designated areas before sending them to shore for recycling, disposal, or treatment • waste receptacles that contain light-weight, solid waste will be covered to prevent waste from blowing overboard • no discharge of waste or plastic products from general operational or maintenance.		
	EPS3.7 : Vessels will comply with AMSA MO 96 - Marine Pollution Prevention (Sewage), Requirements for offshore discharge of sewage have been incorporated into the MARPOL 73/78 sewage discharge control measure. Sewage discharged at sea is treated via a MARPOL (or equivalent) approved sewage treatment system prior to discharge. Food waste only discharged when: • Vessel is en route and >12 nm from land. • Food waste is comminuted or ground to <25 mm and vessel is en route and >3 nm from land. • Food waste is comminuted or ground to <25 mm and platform is >12 nm from land.	CM1: Marine Assurance Process All wastewater discharges will comply with relevant MARPOL 73/78, Navigation Act 2012, Protection of the Sea (Prevention of Pollution) Act 1983 and subsequent Marine Order requirements (as appropriate for vessel classification): • AMSA MO 91 - Marine Pollution Prevention (Oil) • AMSA MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances • AMSA MO 96 - Marine Pollution Prevention (Sewage).	EPS 3.7 aligns with the OPP.
	EPS3.8 : Vessel cargo will be loaded, stowed and secured in accordance with AMSA Marine Order 42 (Carriage, Stowage and Securing of Cargoes and Containers).	CM2: Offshore Operational Procedures In accordance with Marine Order 42 (Carriage, stowage and securing of cargoes and containers), where relevant, to ensure cargo is packed, loaded, stowed and secured throughout each voyage.	Given this control relates to AMSA marine orders, it has been incorporated into CM03 in this EP.
	EPS3.9 : From 1 January 2026 applicable vessels will not use or store firefighting foams containing PFOS, as adopted by the International Maritime Organisation (IMO).		Additional control incorporated from the approved Athena Supply Project EP.

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Control	**EPS**		
	EPS 3.10: Equipment used to treat discharges to AMSA standards is installed and operational on the Vessels and MODU (as relevant to class), or otherwise the respective discharges do not occur.		Additional control incorporated from the approved Athena Supply Project EP.
	All of the above EPS.	CM8: Emissions and Discharges Standards Prior to commencing the offshore activity, the following will be verified, as relevant to vessel class: • 2017 Guidelines for the Implementation of MARPOL Annex V to assist shipowners, masters and crews in applying the Annex V discharge requirements. • Bilge water treated via a MARPOL (or equivalent) approved oily water separator and only discharge if oil content less than 15 ppm. • Sewage discharged at sea is done so only in accordance with AMSA discharge standards and treated via a MARPOL (or equivalent) approved sewage treatment system as applicable. • Food waste only discharged in accordance with AMSA, MARPOL and relevant State discharge standards.	The OPP commits to checking relevancy of AMSA, MARPOL and state requirements for discharge of bilge water, sewage and food waste for project. Each of the requirements described in CM08 are encompassed in the EPS for CM03. Therefore the CM is not a separate CM in this EP. The 2017 guidelines are incorporated to EPS 3.4. EPS 3.7 incorporates the relevant requirements for sewage discharge. EPS 3.7 ensures discharge of food waste requirements are met.
CM04: Fisheries Damage Protocol	EPS4.1: A Fisheries Damage Protocol is in place to provide a compensation mechanism to fishers who damage fishing equipment on Activity infrastructure outside of a PSZ. The protocol was established in collaboration with SETFIA (fisheries peak body). The protocol includes:	CM11: Fisheries Damages will be in place to provide a compensation mechanism to fishers who damage fishing equipment on East Coast Project infrastructure outside of the PSZ	OPP provided future provision for a compensation mechanism to fishers who damage fishing equipment on East Coast Project infrastructure outside of the PSZ. Given that following the completion of Annie-2 well, a PSZ will be placed around the well and tree it is unlikely that fishers will damage

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• an incident report form with prompts for details of fishing activities, sea state, details of any damaged gear, details of repairs required, photos, dates and times. • commitment for initial response to claimant within 4 working days confirming details. • the mutually agreed process for selecting the Tribunal (an independent assessor), whose decision is final and binding • requirement for Tribunal to be formed within 21 days of initial notification to undertake assessment of evidence and determine fault and damages payable.		their property as the protocol excludes for damage within the PSZ. This control is conservatively included in event fishers may damage their equipment should they enter the precautionary zone & damage their equipment on the moorings/ anchors for the MODU when the MODU is drilling. EPS 4.1 if focused on the protocol itself and EPS 4.2 is the PS required in event compensation is payable to fishers.
	EPS4.2: In event that the Tribunal determines compensation is payable under the Fisheries Damage Protocol: • payment will be made within 14 days of that decision. • a deed of release is provided to the claimant where compensation is payable, in the form provided for in the Protocol (schedule 5).		
CM05: Ongoing consultation	EPS5.1: Further engagement will take place during the development and implementation of component EPs. This will include: • details relating to notification of third-party stakeholders, • engagement with other titleholders in the Otway with respect to each others ongoing activities and potential cumulative impacts. Relevant information received will be included within the EPs as appropriate.	CM13: Ongoing Engagement Further engagement will take place during the development and implementation of component EPs. This will include: • details relating to notification of third-party stakeholders, • engagement with other titleholders in the Otway with respect to each others ongoing activities and potential cumulative impacts.	EPS 5.1 aligns with the OPP.

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Control	**EPS**		
	EPS5.2: Notification of activity commencement and completion to relevant stakeholders as per notifications register.	Relevant information received will be included within the EPs as appropriate.	EPS 5.2 is a requirement under the Regulations.
	EPS5.3: Any complaints received by Amplitude Energy from other marine users in relation to air quality will be investigated and outcomes shared with the person who made the complaint.		The EP has introduced an additional EPS to the management of atmospheric emissions relating to investigating and responding to complaints.
	EPS5.4: Notifications for any on-water activities and ongoing consultations undertaken per Section 12.12.		EPS5.4 aligns with the intent of CM13 in the OPP.
	EPS5.5: Observation, incidents, and opportunities for improvement regarding the interaction with other marine users will be reported to other petroleum titleholders.		Amplitude meets with other Operators in the Otway to share information in regards their petroleum activities.
CM06: Light Management Measures	EPS6.1: MODU and vessel lighting will be limited to the minimum required with the exception of emergency events for navigational and safety requirements'. MODU and the vessels will implement light management measures developed with consideration to the National Light Pollution Guidelines for Wildlife, these include, but are not limited to: • Outward facing lights will be reduced to minimum levels required for a safe work environment. • Directions to minimise the use of non-essential lights (e.g. close blinds, turn off lights when leaving a room) will be included in MODU and vessel inductions. • Recording and reporting of any seabirds found on the MODU or vessels in need of care.	CM4: Light Management Measures MODU and the vessels will implement light management measures developed with consideration to the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023k), these include, but are not limited to: • Outward facing lights will be reduced to minimum levels required for a safe work environment. • Requirement to minimise the use of non-essential lights (e.g. close blinds, turn off lights when leaving a room) will be included in MODU and vessel inductions. • Recording and reporting of any seabirds found on the MODU or vessels in need of care. • Procedures to manage and care for any seabirds found on board requiring	The control measure in the EP is equivalent to that described in the OPP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• Procedures to manage and care for any seabirds found on board requiring care, including remote advice from Zoos Victoria Marine Response Unit (MRU) or equivalent.	care, including remote advice from Zoos Victoria Marine Response Unit (MRU) or equivalent. • Adaptive management will be detailed in the light management measures to be included in future EPs under this OPP when scheduling of the activity is known in greater detail, including the potential for concurrent vessel/ MODU activities and overlap with biologically important periods.	
CM07: Well Testing Program	EPS7.1: Periods of flaring will not exceed 36 hours or flow rate of 60 MMscfd	CM21: Well Flowback Program - Clean-up and flowback criteria will be defined within the flowback program. The flowback criteria will establish the rates and volumes to be produced from the well to gather sufficient information to characterise the reservoir and fluid, and clean-up the well. Flow from the well will cease once sufficient information has been gathered. Flared volumes of gas will not exceed a rate of 60 MMscf/day, or duration of 60 hours per well.	The EP and OPP both commit to flaring volumes of gas not exceeding a rate of 60 MMscf/day for a period of 60 hours. It is expected that the flaring for well testing Annie-2 will not exceed 36 hours (which is a shorter duration than that described in the OPP).
	EPS7.2: Confirm flare tip is clear of birds prior to commencing flaring	No equivalent in the OPP.	The commitments in EPS 7.2 – 7.4 are in addition to those described in the OPP and included to reduce the potential impacts to birds associated with the flare, as well as reduce the GHG and atmospheric emissions associated with the flaring.
	EPS7.3: Well Test Program will provide for: • A burner which atomises hydrocarbons to yield smoke free combustion will be used to burn-off gas and condensate returned from the well. • Burner & flare have redundant pilots		
	EPS7.4: Well Test Program will provide for: • The flare tip will be monitored while flaring occurs.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• Burner pilots are ignited before and during flow back activities to minimise dropout from the flare. • Dedicated crew members will be on flare watch while flaring is undertaken to identify dropout and notify the well test team to cease or modify the well test to eliminate dropout.		
CM08: Planned Maintenance System	EPS8.1: Planned maintenance will be implemented throughout the activity. This ensures that critical equipment on vessels and MODU will be maintained in manufacturer's instructions and ongoing maintenance to ensure efficient operation including: • Combustion Equipment (Vessels).	CM1: Marine Assurance Process Power generation and propulsion systems on vessels will be operated in accordance with manufacturer's instructions and ongoing maintenance in accordance with vessel planned maintenance system, to ensure efficient operation.	CM08 describes for the planned maintenance of systems (that manage for emissions and discharges) on board vessels and MODU to ensure that they operate to required specifications.
	EPS8.2: Planned maintenance will be implemented throughout the activity. This ensures that critical equipment on vessels and MODU will be maintained in manufacturer's instructions and ongoing maintenance to ensure efficient operation including: • equipment involved in discharge management		The EP includes an additional CM to the maintenance of equipment involved in discharge management above the OPP.
	EPS8.3: Equipment and propulsion systems generating impulsive or continuous sound emissions will be operated in accordance with manufacturer's instructions and ongoing maintenance in accordance with vessel and MODU's planned maintenance system, to ensure efficient operation.	CM1: Marine Assurance Process - Equipment generating impulsive sound emissions will be operated and maintained in accordance with manufacturer's instructions to ensure efficient operation.	EP and OPP both commit to equipment and propulsion systems being operated and maintained in accordance with manufacturer requirements.
CM09: Offshore Equipment	EPS9.1: Solids control equipment (MODU) is installed and operational once BOP is in place on the well to enable recovery and re-use of drilling fluids, to reduce volumes discharged.	CM7: Offshore Equipment Additional equipment, such as solids equipment, will be available on the MODU. Equipment will assist with recovering and	OPP and EP commit to solids control equipment on the MODU to recover and reduce the volume of discharged fluids.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	Equipment used to treat discharges to AMSA standards is installed and operational on the Vessels and MODU, or otherwise the respective discharges do not occur.	reducing the discharge of excess fluids and reduce the volume of SBDF on cuttings.	Note that the reference to SBDF is removed, given no SBDF is used in this Activity. The EP commits to have equipment to treat discharges to AMSA standards on the vessels and MODU, or otherwise the respective discharges do not occur.
CM10: Amplitude Energy Offshore Chemical Assessment Procedure	EPS10.1: The Amplitude Energy Offshore Chemical Assessment Procedure will be used to ensure that project chemicals with the potential to be discharged to sea are not of unacceptable risk. This will be done by: • preferentially selecting products that are on the current OSPAR PLONOR list, and/or • are rated Gold/Silver/E or D under the UK OCNS, and do not have a substitution warning, or, • have a completed a hazard assessment confirming they are not of unacceptable risk (toxic, very bioaccumulative (and bioavailable), and highly persistent) and are justified by technical need and analysis of alternatives.	CM6: Cooper Energy Offshore Chemical Assessment Procedure. Project chemicals will meet the requirements of the Cooper Energy Offshore Chemical Assessment Procedure. This process is used to ensure the lowest toxicity, most biodegradable and least bioaccumulative chemicals are selected which meet the technical requirements, where their function necessitates discharge to sea. The process consults public chemical assessment repositories such as PLONOR list, OCNS Definitive Ranked List, OSPAR and OCNS listings for those chemicals to be discharged. Eco-toxicity is evaluated with any required control measures defined. Chemicals that are highly toxic, have high bioaccumulation potential, and have high persistence in organisms are screened out during the assessment process. Only chemicals that meet low ecotoxicity pre-screening criteria or are further justified as ALARP can be approved for discharge. An accepted chemical list is issued to the offshore project team detailing which products may be discharged and in what circumstances.	Both the EP and OPP commit to applying the company chemical assessment procedure to manage impacts through potential discharge to sea unacceptable risk.
	EPS10.2: An accepted chemical list will be issued to the offshore project team detailing which products may be discharged and in what circumstances.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
CM11: Titleholder Collaboration	EPS11.1: Amplitude Energy will continue to engage in industry collaboration efforts relating to the management of unused bulks.	Described in Figure 12-7 of the OPP.	The EP includes this as a specific CM to continue engagements relating to the management of unused bulks building on the OPP reference to industry collaboration (Section 8.6.2.1).
	EPS11.2: Amplitude Energy will share sightings data with other Titleholders in the Otway region and local research organisations to help inform each other's programs of work and respective risk reviews.	Described in Figure 12-5 of the OPP.	The EP includes this as a specific CM to share sightings data and demonstrate implementation of the Whale Disturbance Risk Management Process.
CM12: Inventory Management	EPS12.1: Solids control equipment will be used as part of the drilling fluid circulation system when drilling with riser installed, to help condition the drilling fluid for reuse, and minimise the overall volumes of drilling fluid discharged. At the end of the Activity unused bulks (barite, bentonite, cement) will be managed in accordance with Figure 12-9. Upon completion of the activity excess dry bulks will be managed with one of the following: • retained onboard for future activity where acceptable by the subsequent operator or, • use up cement via increasing the volume used in the well, if design allows, • returned to shore where feasible, where considered ALARP after risk assessment during the execution phase, and where permitted by the MODU and vessel operator safe systems of work. Spare chemical additives will be retained on board where acceptable by the subsequent operator or returned to shore.	CM25: Inventory Management Aligned to Minimata Convention, quality control limits for barite will be applied: • Mercury (Hg) – 1 mg/kg (1 ppm) dry weight in stock barite. • Cadmium (Cd) – 3 mg/kg (3 ppm) dry weight in stock barite. At the end of the Project unused bulks will be managed in accordance with Figure 12-7. Upon completion of the activity, excess dry bulks will be managed with one of the following: • retained onboard for future activity where acceptable by the subsequent operator • use up cement via increasing the volume used in the well, if design allows • returned to shore where feasible, where considered ALARP after risk assessment during the execution phase, and where permitted by the MODU and vessel	OPP and EP align on inventory management control measures.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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	In the event the re-use and return-to shore options are not feasible and ALARP then discharges of bulks will be: • Slurrified with water prior to release overboard to facilitate dispersion • Limited to 50m^3 of dry bulk per batch of slurry released to facilitate dispersion • Released no closer to shore, and in water depths no shallower than, the location of the well being constructed, to ensure impacts remain within the parameters assessed within the EP.	operator safe systems of work. Spare chemical additives will be retained on board where acceptable by the subsequent operator or returned to shore.	
	EPS12.2: Barite concentrations will be at or below: • Mercury (Hg) – 1 mg/kg (1 ppm) dry weight in stock barite. • Cadmium (Cd) – 3 mg/kg (3 ppm) dry weight in stock barite.		
	EPS12.3: Detailed cementing procedures will be developed and implemented before cementing activities commence		
	EPS12.4: Actual cement use and discharge will be reconciled against planned quantities throughout the campaign.		
CM13: Offshore Operational Procedures	EPS13.1: Existing infrastructure will be protected from impact by mooring equipment via: • Mooring analysis and plan by mooring specialist which accounts for the locations of existing infrastructure. • Anchor selection and placement to reduce potential for anchor drag.	No equivalent in the OPP.	Additional control incorporated from the approved Athena Supply Project EP.

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	Further contingencies will be in place to minimise the potential for damage to existing infrastructure. Including: • Mooring design which includes a 12-anchor spread to provide additional redundancy for position keeping should a mooring fail. • Dynamic positioning – available in the event of mooring failure, where required for station keeping. Field entry / exit protocol – vessels will require approval from the Athena Gas Plant Person In Charge (PIC) to enter the field; asset risk management measures must be demonstrated for approval to be granted.		
	EPS13.2: Mooring procedures will ensure: • Adequate tensioning of mooring is applied and maintained. • Mooring equipment is only installed or stored within the designed radius areas of the mooring spread. Seabed relief and sensitive seabed features are considered based on seabed surveys, and sensitive features (i.e. areas of high relief) are avoided where practicable.	CM2: Offshore Operational Procedures Mooring procedures for the MODU will reduce overlap/disturbance by ensuring: • Adequate tensioning of mooring for the MODU is applied and maintained. • Mooring equipment for the MODU is only installed or stored within the designed radius areas of the mooring spread. The final selection of well locations, flowline paths, mooring and other infrastructure will consider survey observations to ensure: • Areas of seabed habitat types including high relief outcrops, reefs and sponge beds will be avoided, or overlap with the Project footprint is reduced, where practicable.	OPP and EP align on mooring procedure control measures with both EPS 13.2 and EPS 16.1 (in relation to underwater heritage, debris and hazards on the seafloor).

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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		• Underwater heritage, debris and hazards on the seafloor will be avoided and not overlapped with the Project footprint.	
	EPS13.3: Retrieval of mooring equipment, including transponders, from the sea floor prior to or at the completion of the activities.	No equivalent in the OPP.	Aligns with OPP commitment to remove
	EPS13.4: Drilling Discharges Management processes minimise as far as practicable, the overall volumes of WBDF discharged to the marine environment. It does this by defining the: • volumes of fluids required for safe execution of the activity, including contingency for well control. • fluids storage arrangements and transfer capacities on the MODU and support vessels, and how storage capacity will be actively managed to facilitate re-use of WBDF. • properties of the fluid required to be maintained throughout the different stages of well construction. • fluid acceptability criteria for re-use. • the solids control equipment to enable re-use of fluids. These aspects of drilling fluids management are a direct result of the well design and technical requirements that are defined in the WOMP. Drilling and cementing procedures will define how each step of the well construction process is to be completed in accordance with relevant	CM2: Offshore Operational Procedures Drilling Discharges Management processes minimise as far as practicable, the overall volumes of WBDF discharged to the marine environment. It does this by defining the: • volumes of fluids required for safe execution of the activity, including contingency for well control. • fluids storage arrangements and transfer capacities on the MODU and support vessels, and how storage capacity will be actively managed to facilitate re-use of WBDF. • properties of the fluid required to be maintained throughout the different stages of well construction. • fluid acceptability criteria for re-use. • the solids control equipment to enable re-use of fluids. These aspects of drilling fluids management are a direct result of the well design and technical requirements that are defined in the WOMP. Drilling and cementing procedures will define how each step of the well construction	OPP and EP align on the Drilling Discharges Management processes. This activity will not use SBDF therefore control measures related to SBDF are not carried into this EP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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	standards (as defined in the WOMP) before the offshore activities take place.	process is to be completed in accordance with relevant standards (as defined in the WOMP) before the offshore activities take place. SBDF may be used where technical requirements preclude the use of WBDF (contingent), only once the riser between the well and MODU is installed. This ensures SBDF is circulated in a closed loop and no bulk SBDF fluids are discharged overboard. Drill cuttings recovered with the SBDF will be processed on the MODU to recover and reduce residual SBDF content prior to overboard discharge. There will be no bulk discharge of SBDF.	
	EPS13.5: Vessel operators shall adhere to the distances and vessel management practices of EPBC Regulations (Part 8) and Victorian (Marine Mammals) Regulations within respective jurisdictions, as a minimum, and shall report vessel interactions with dolphins and whales. Caution zones will be extended to 500m around all whales. Helicopters will not fly lower than 1650 ft when within 500 m horizontal distance of a cetacean except when landing or taking off and will not approach a cetacean from head on. Marine mammal sightings will be recorded and submitted to DCCEEW. Sightings will be reported within three months of the end of the activity.	CM2: Offshore Operational Procedures All vessels will adhere to the distances and vessel management practices of EPBC Regulations (Part 8 Division 8.1 interacting with cetaceans) as a minimum. All helicopters and vessels will adhere to the distances and vessel management practices of EPBC Regulations (Part 8 Division 8.1 interacting with cetaceans).	This control measure is aligned between the EP and OPP.

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CM14: MODU Material Transfer Process	EPS14.1: MODU will have a bulk fluid transfer process in place before commencing operations. The process will include: • MODU-to-vessel communication protocols. • Transfer hose integrity checks. • Transfer hose pressure testing. • Continuous visual monitoring while bunkering. • Tank volume monitoring while bunkering. • Avoidance of bulk hydrocarbon transfers at night, or otherwise artificial illumination of the of the operational areas on the MODU, vessel and water between them during the transfer. • Weather limitations for bulk transfers.	CM29: MODU Material Transfer Process MODU will have a bulk fluid transfer process in place before commencing operations. The process will include: • MODU-to-vessel communication protocols. • Transfer hose integrity checks. • Transfer hose pressure testing. • Continuous visual monitoring while bunkering. • Tank volume monitoring while bunkering. • Avoidance of bulk hydrocarbon transfers at night, or otherwise artificial illumination of the of the operational areas on the MODU, vessel and water between them during the transfer. • Weather limitations for bulk transfers.	This control measure is aligned between the EP and OPP.
	EPS14.2: Transfer hoses for hydrocarbons shall comprise sufficient floating devices and self-sealing weak-link couplings in the midsection of the hose string.	No equivalent in the OPP.	Additional control incorporated from the approved Athena Supply Project EP.
CM15: Campaign Risk Review	EPS15.1: A Campaign Risk Review, as detailed in Figure 12-6 will be undertaken in the 6-months prior to a campaign activity commencing, to: • Model noise emissions for any additional activity scenarios not already provided for in this EP. • Integrate into modelling the latest relevant sound exposure thresholds to review previously discounted control measures against updated guidance and newly accepted EPs to ensure that risks are continually	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors.	The CM for noise emissions modelling review is incorporated as step within the Campaign Risk review. This control measure is aligned between the EP and OPP.

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	reduced to levels that are ALARP and are of an acceptable level. The assessment of environmental impacts and risks will focus on aspect: subsea noise, and risks to endangered whale species, specifically pygmy blue whales, and southern right whales. A risk review may also be triggered during the offshore campaign where DP nighttime triggers have been exceeded, if ≥ 3 sightings of blue whales or >3 sightings of southern right whales are recorded within the observation zone for 3 consecutive days, or if concerns are raised by a member of the project or community. Risk Reviews during the campaign will be informed by a panel including MFO's experienced in the region, Activity Manager (or delegate), Vessel master (or delegate) and Amplitude Energy HSEC Representative. Recommendations will be managed in accordance with the Amplitude Energy MOC process.		
	EPS15.2: The Cooper Energy Environmental Protocol describes how environmental impact and risk management, including risk assessments, is undertaken for activities including offshore campaigns. As part of pre-campaign planning a risk review (refer Figure 12-6) will be undertaken to re-assess campaign environmental impacts and risks to ensure acceptability criteria are met and that impacts and risks are reduced to ALARP. The risk review will consider aspects relevant to the campaign; where there is a risk that campaign discharges to sea may contain mercury, the risk review will consider the current best	CM20: Campaign Risk Review The Cooper Energy Environmental Protocol describes how environmental impact and risk management, including risk assessments, is undertaken for activities including offshore campaigns. As part of pre-campaign planning a risk review (refer Figure 12-5 of the OPP) will be undertaken to re-assess campaign environmental impacts and risks to ensure acceptability criteria are met and that impacts and risks are reduced to ALARP. The assessment of environmental impacts and risks will focus on aspect: subsea noise, and	

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
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	available techniques and environmental practices in order to control releases of mercury.	risks to endangered whale species, specifically pygmy blue whales, and southern right whales	
	EPS15.3: Review analogue light modelling scenarios to ensure that the scenarios and thresholds remain appropriate for the activity.	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors.	This control measure is aligned between the EP and OPP.
	EPS15.4: Review the LoC modelling scenarios to ensure that the modelled scenarios and thresholds are appropriate for the activity.	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors.	This control measure is aligned between the EP and OPP.
	EPS15.5: Each future EP resulting from the East Coast Project OPP will undertake a review for additional or significantly revised reasonably foreseeable projects. Additional or significantly revised projects will be assessed as per CIA methodology (Section 9.0). Any cumulative impacts from new, significantly revised or currently unknown activities that results in an unacceptable level of impact to receptors, will be subject to new or revised control measures within the appropriate EP to reduce cumulative impacts to ALARP.	CM27: Each future EP resulting from the East Coast Project OPP will undertake a review for additional or significantly revised reasonably foreseeable projects. Additional or significantly revised projects will be assessed as per CIA methodology (Section 11.1). Any cumulative impacts from new, significantly revised or currently unknown activities that results in an unacceptable level of impact to receptors, will be subject to new or revised control measures within the appropriate EP to reduce cumulative impacts to ALARP.	This control measure is aligned between the EP and OPP. Section 9.0 of the EP reviews potential future projects as part of the CIA.
CM16: Seabed Survey	EPS16.1: Seabed surveys (geophysical, geotechnical, visual and contaminant sampling) will be undertaken for the purposes of collecting information to manage risks to the Shelf rocky reefs and hard substrates KEF values (high relief outcrops, reefs and sponge beds), sediment	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors.	This control measure is aligned between the EP and OPP. The seabed survey was undertaken in May and June 2025 (refer Section 4.3.1). The Annie-2 development well location avoids sensitive features such as reef structures of

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	quality, underwater heritage, debris and hazards on the seafloor. Seabed surveys will be undertaken prior to finalising MODU position, location of mooring equipment and finalising wells and subsea infrastructure locations. Relevant survey seabed findings (benthic environment, heritage, hazards) will be included in future EPs if available at the time of preparing EP. In the event unpredicted contaminants are detected Cooper Energy will undertake a human health and environmental risk assessment to ensure ALs and EPOs are met.	Seabed surveys for fields where the seabed has not been characterised will be undertaken prior to well construction activities being undertaken, this will form an input into the Risk Review process described in Section 12.9.	high relief, and is considered a suitable location.
CM17: Offshore Victoria Whale Disturbance Risk Management Procedure	EPS17.1: Active DP thruster management: • MODU and vessel DP thrusters will not be operated with loading outside of DP system Activity Specific Operation Guideline (ASOG) (DP ASOG will require loading not to exceed 70% except as necessary to avoid an emergency).	CM22: Modelling Review Modelling studies used to inform the Activity Environment Plan will use scenarios that are representative of the activity, and current, published thresholds that are suitable for sensitive receptors. CM3: Cooper Energy Offshore Victoria Whale Disturbance Risk Management Process. The Cooper Energy Offshore Victoria Whale Disturbance Risk Management Process provides for the environment performance requirements that apply to the East Coast Project which are described in Section 8.2.7 of the OPP. The process provides a framework for minimising noise impacts to whales and details specific measures to be implemented that will ensure impacts and	The EP includes detailed EPS to reflect the implementation of both the modelling review, the campaign risk review and Amplitude Energy's Offshore Victoria Whale Disturbance Risk Management Process. The control measures are aligned between the EP and OPP. Both the EP and OPP commit to applying a monitoring program, adaptive management processes informed by subsea noise modelling and effective communications protocol. The EP further commits to active DP thruster loading aligned with ASOG. The EP includes specific activity detail on specific adaptive management and DP suspension measures of the process. [Including: night time criteria, distances,
	EPS17.2: Marine Mammal Monitoring: • 30-minute pre-start whale observation will be required within the DP observation zone for the activity, before DP operations commence, or nighttime criteria is met for DP operations at night. To be completed by the Dedicated MMO. • Ongoing monitoring for marine mammals throughout daylight hours across the monitoring network, with at least one dedicated MMO available offshore at all times whilst DP operations are happening.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	EPS17.3: DP Observation Zones The DP Observation Zones for the Activity are determined by specialist subsea noise modelling service provider and include: • 8.3 km during MODU on DP during mooring activities. • 500 m during vessel on DP activities.	risks meet acceptable levels described in the OPP. The process acknowledges legislative requirements and establishes the criteria and methods by which potential disturbance to relevant whale species is identified. The process identifies management measures for different types of offshore activity, accounting for nature and scale of the potential impacts and risks, to ensure they remain within acceptable levels, and are managed to ALARP. Provisions within the process include: • Consideration for vulnerable species during sensitive life stages most susceptible to noise emissions via a planning-phase risk review, integrating latest published Government Plans and scientific literature. This will consider scheduling of activities outside of higher sensitivity period where practicable, and review of control measures to ensure levels of impact and risk remain ALARP. The Whale Disturbance Risk Management Process acknowledges legislative requirements and establishes the criteria and methods by which potential disturbance to relevant whale species is identified. The	durations, resourcing, communication, reporting, MMO competency]
	EPS17.4: Marine Mammal Observation Network The observer network for the Activity will comprise: • Dedicated MMO on support vessels, with two MMOs if daylight exceeds 12-hours (sunrise-sunset) to provide continuous observation in daylight hours. There will be at least one MMO within the DP Observation Zone at all times when DP Ops are happening. • Officers of the Watch on support vessels observing as per normal vessel shift patterns and duties; the officer of the watch will provide coverage for the dedicated MMO during normal work breaks. If there is only one dedicated MMO offshore and that MMO is unable to complete their duties, then a second MMO will be mobilised to the DP Observation Zone before DP operations commence • Officers of the Watch on MODU observing as per normal MODU shift patterns and duties. • Helicopter crew (personnel transfers from shore to the MODU) observing opportunistically during over-sea transit. • Observations from other operators working in the region where the information is shared.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• Observations from publicly available Citizen Science.	process identifies management measures for different types of offshore activity, accounting for nature and scale of the potential impacts and risks, to ensure they remain within acceptable levels, and are managed to ALARP. Provisions within the process include consideration for vulnerable species during sensitive life stages most susceptible to noise emissions via a planning phase risk review, integrating latest published Government Plans and scientific literature. This risk review: • will consider scheduling of activities outside of higher sensitivity period where practicable, and review of control measures to ensure levels of impact and risk remain ALARP. • requires the identification and selection of control measures, including new techniques and technologies, where their use is proven, provides benefit, and is practicable for the campaign. The use of new techniques and technologies is informed by research, engaging engagement with expert third parties such as specialist consultants, and participation in industry forums such as the AEP marine noise working group. Section 12.9 (of the OPP) provides a holistic overview of how the process is applied on a	
	EPS17.5: Observation uncertainty: Species confirmation criteria will be developed for blue whale and southern right whale ID, by an experienced MMO (5+ years' experience) and will be provided to the Activity Dedicated MMOs. For crew observers, dedicated MMOs will advise on species where there is uncertainty.		
	EPS17.6: DP Suspension Actions: • Suspension of DP operations (if safe to do so) where a blue or southern right whale is observed within the relevant activity DP Observation Zone. • Suspension of DP operations (if safe to do so) before any whale is observed within the Activity DP TTS zone continuously for 24 hours. *Note: DP TTS Zones are smaller than the DP Observation Zones and are defined in the noise modelling report.* • Adopt favourable heading to reduce thruster load (and associated noise) and slowly increase separation from whale if safe to do so. • Apply 60-minute pre-start observation prior to recommencing activities, from the time the BW or SRW was last observed in the activity DP observation zone. • Night-time criteria: DP operations are to be avoided (if safe to do) so when: 3 or more sightings of blue or southern right whales occurred in the DP Observation Zone within 3-		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	hours prior to sunset, or a blue or southern right whales are observed within the 30 minutes prior to sunset inside the observation zone and have not been observed leaving the zone. ***Whether it is safe to take action is determined by the person in command of the vessel (i.e. vessel master or their delegate).*	campaign-by-campaign basis to ensure that acceptable levels of impact are not exceeded during that campaign, and accounts for new information, practices and requirements. The process also provides details on: • level of whale observation effort • triggers for actions • actions to be taken to avoid injuring whales and avoid behavioural disturbance to endangered whale species (blue whales and southern right whales), • actions to be taken to ensure any southern right whale is not prevented from utilising BIA's or HCTS • actions to be taken to reduce the risk of displacement of a foraging blue whale, and minimise the risk of disturbance to a southern right whale in a migration and/or reproduction area. The Whale Disturbance Risk Management Process communicates how whale interaction and disturbance risks are to be managed by offshore project teams, and crews on offshore vessels involved in offshore projects. The procedure provides details on the level of whale observation effort, triggers for actions and the actions to be taken to manage potential impacts to whales. This includes caution and no approach zones which meet or exceed	
	EPS17.7: Daily Reporting: A daily MMO report will be issued, consolidating all sightings and actions from across the monitoring network.		
	EPS17.8: MMO Capacity and Competency: • Dedicated Lead MMO minimum experience / competency is multiple offshore campaigns as a marine mammal observer with experience observing blue whale and southern right whale within BIAs (or international equivalent). • At times of year when daylight hours exceed 12-hours, there will be a second dedicated MMO (minimum experience / competency is: at least one offshore campaign as a marine mammal observer, and familiar with the ID features for blue whales and southern right whales. • Dedicated MMOs shall have demonstrated prior experience in the ID of large baleen whales, distance estimation and systems of recording and reporting, and understand the Australian regulatory requirements. • MMOs shall be hired from service providers with expertise in marine mammal observing.		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	• MMO experience and competency will be reviewed and confirmed by the MMO service provider and checked by Amplitude Energy prior to their mobilisation to monitor a DP Observation Zone. • Vessel Officers of the Watch: the dedicated MMO(s) will be supported by trained bridge crew. Bridge crews will be inducted into Activity requirements and whale ID and will have a high base level of observation experience and competency noting watchkeeping duties are a core competency, and marine mammal observation for collision avoidance and to minimise behavioural disturbance to endangered blue and southern right whales, is applicable to all offshore marine users. • Helicopter Crew: Helicopter crew will complete MMO Program Induction. • MMO Program Inductions - Dedicated MMOs, Vessel and MODU Officers of the Watch, and helicopter crews shall receive an induction including: – overview of the Activity – description of species that are the focus for the program and why – marine mammal monitoring and action requirements – ID criteria for endangered whales – reporting requirements.	regulatory standards under the EPBC Act. Reporting of vessel strike incidents in the National Vessel Strike Database is required and described in Section 12.13. Where there is a risk of TTS or AUD INJ to whales, or a risk of behavioural disturbance to southern right whales or blue whales, the following adaptive management provisions apply: • The extent of potential TTS, Injury and behavioural disturbance are defined through subsea noise modelling by subsea acoustics specialist. • A monitoring program is established to observe for whales within the potential impact areas defined by the modelling. • Monitoring informs activity modification (where safe to do so) to prevent the occurrence of unacceptable levels of impact and reduce the risk of their occurrence. • Monitoring is implemented through conventional methods such as marine mammal observation by trained and competent marine mammal observers, or by other methods and technologies where they have been demonstrated as being effective for mitigation purposes. • Establishment of a communications protocol between monitoring team, vessel master and project team.	
	EPS17.9: The Whale Disturbance Risk Management Procedure will be implemented,		

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	assisting the implementation of CM17. Applicable Provisions within the procedure include: • Establishment of a communications protocol between observers, vessel master and project team. • Dedicated MMO for the hours of daylight (defined as sunset to sunrise). A 2nd MMO where necessary if daylight extends beyond 12-hr period. • Dedicated MMOs shall have demonstrated prior experience in the ID of large baleen whales, distance estimation and systems of recording and reporting. • Inducted crew observers to support dedicated MMO during rest breaks. Reporting of any injured marine mammal to relevant response and regulatory agencies.		
CM18: Other Detection Technologies	EPS18.1: Amplitude Energy will continue to seek other technologies for whale detection through discussions with specialist service providers, other titleholders, and/or participation in the AEP Marine Noise Working Group. Technologies that are identified will be assessed with the campaign risk review panel. Evaluation criterion will include technology readiness, the level of risk reduction (specific to the risk event) afforded by the technology, Activity integration feasibility and costs. Where detection technologies are used, they will be in addition to the MMO program and technology effectiveness will be shared with other operators in the region.	Described in Figure 12-5 of the OPP.	The EP includes this as a specific CM to demonstrate implementation of the Whale Disturbance Risk Management Process.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
CM19: Waste Management Practices	EPS19.1: Vessels and MODU implement a garbage management plan. • The waste hierarchy is applied to project wastes. • Waste with potential to be windblown is contained and restrained. • Waste lost overboard is recorded and recovered if possible. • Waste transfers are recorded.	CM1: Marine Assurance Process MODU and vessels will comply with relevant MARPOL Commonwealth requirements and subsequent Marine Orders for waste management practices.	This CM aligns with the OPP.
CM20: Amplitude Energy IMS Risk Management Protocol	EPS20.1: - Vessels and MODU will comply with the Australian biofouling management requirements and Australian ballast water management requirements. Vessels and MODU biofouling and ballast management histories are used to complete an IMS Risk assessment prior to the vessel arriving within the operational area. Subsequent risk management actions are completed in accordance with the Vessel Biofouling and Ballast Water Management Plans for Low-risk Vessels, or otherwise in accordance with recommendations of a qualified IMS inspector.	CM15: Cooper Energy IMS Risk Management Process The Cooper Energy IMS Risk Management Process acknowledges legislative requirements and the different sources of IMS risk for different types of project activity. The Process details the regulatory and any additional company requirements to manage biofouling and ballast water risks to levels that are acceptable and ALARP.	Both the EP and OPP commit to implementing the IMS risk management process. The EP commits to completing this prior to the vessel arriving within the operational area and completing actions in alignment with the Vessel Biofouling and Ballast Water Management Plans. Section 12.9 and Figure 11.5 in the EP describe IMS Risk Management.
CM21: Activity Fire Fighting Foam Screening and Quarantine Standard	EPS21.1: From 01 July 2025, firefighting foams for well construction activities (i.e. response standby Aqueous Film Forming Foam (AFFF) for the well test package) will not contain PFOS, PFOA, PFHxS and related substances in compliance with IChEMS (Schedule 7). Firefighting foam SDS will be screened for these substances; any firefighting foams that do not comply with this requirement as of 01 July 2025 will not be used or stored offshore, or, if any	Not described in OPP.	Additional control incorporated from the approved Athena Supply Project EP.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	legacy products are found offshore, they will be quarantined.		
CM22: NOPSEMA Accepted WOMP	EPS22.1: A NOPSEMA-accepted WOMP. The WOMP includes, as applicable to the activity: • Amplitude Energy well management standards detailing how well integrity will be managed over the well life cycle. • A description of well barriers. • Performance and testing criteria.	CM14: Facility Safety and Integrity Management Plans Under Part 5 of the OPGGS (Resource Management and Administration) Regulations 2011, a NOPSEMA accepted WOMP (including Cooper Energy Well Management System) and a Safety Case is required before well activities can be undertaken. The WOMP details the well barriers and the integrity testing that will be in place for the activity.	OPP and EP align on the control measure of accepted WOMP.
CM23: NOPSEMA Accepted Safety Cases	EPS23.1: Activities will be managed in accordance with the accepted safety case revisions.	CM14: Facility Safety and Integrity Management Plans A NOPSEMA accepted safety case is required before any development activities can be undertaken. All activities will be managed in accordance with accepted safety cases.	OPP and EP align on the control measure of accepted Safety Case Revisions.
CM24: Source Control Emergency Response Plan	EPS24.1: Source control capability is maintained in accordance with the SCERP. Source control response activities will be implemented in accordance with the SCERP.	CM19: Source Control Emergency Response Plan The Cooper Energy source control emergency response plan (SCERP) acknowledges legislative requirements and provides in detail the company's plans, equipment and personnel provisions to enable a source control response, commensurate to the risk at each stage of a wells life cycle from initial drilling to closing off the reservoir.	OPP and EP include control measure of a SCERP for the drilling activity.
CM25: Oil Pollution Emergency Plan (OPEP)	EPS25.1: Emergency spill response capability is maintained in accordance with the OPEP. Emergency response activities will be implemented in accordance with the OPEP.	CM17: OPEP Under the Regulations, the petroleum activity must have an accepted Oil Pollution Emergency Plan (OPEP) in place before the activity commences. In the event	The OPEP is attached to the EP submission. The EP includes an assessment of the proposed oil spill response strategies for the activity (refer Section 7).

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
		of a subsea LOWC, the OPEP will be implemented. Cooper Energy acknowledges that any response will be implemented in accordance with the requirements described within the OPEP.	
CM26: Operational and Scientific Monitoring Plan (OSMP)	EPS26.1: Operational and scientific monitoring will be implemented in accordance with the OSMP.	CM16: OSMP Cooper Energy's OSMP details the arrangements and capability in place for: • operational monitoring of a hydrocarbon spill to inform response activities • scientific monitoring of environmental impacts of the spill and response activities	OPP and EP align on the OSMP.
CM27: Amplitude Energy Decommissioning Protocol	EPS27.1: Amplitude Energy will meet the requirements of Section 572 ('Maintenance and removal of property etc. by titleholder') of the OPGGS Act. • If Annie-2 development well does not access a commercially viable resource following well testing, it will be abandoned at the time of well evaluation and within the well activity duration of this EP • The Annie 2 development well will be permanently abandoned within 3 years in the event the well is not tied into the existing CHN pipeline, or as accepted in the governing WOMP where integrity can be demonstrated as per regular inspection and/ or monitoring activities. • Annie-2 will be permanently abandoned within 3 years of permanently ceasing	CM10: Implement Cooper Energy's Decommissioning Protocol The Cooper Energy Decommissioning Protocol acknowledges legislative requirements and illustrates the company's management system for integrating decommissioning planning and provisioning through a project's life cycle.	OPP commits to implementation of the Decommissioning Protocol to integrate decommissioning planning to projects. EP CM29 EPS8 commits to meeting Section 572 of the OPGGS Act unless an alternative is accepted.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	production or as accepted in the governing WOMP where integrity can be demonstrated as per regular inspection and/ or monitoring activities. • All well equipment on the seabed will be recovered.		
CM28: Retrieval of dropped objects were practicable	EPS28.1: If practicable to do so, objects accidentally dropped to the seabed will be retrieved.	Not described in OPP.	Additional control incorporated from the approved Athena Supply Project EP.
CM29: Engagement During Emergency Response	EPS29.1: Engagement with relevant First Nations Representatives in the event of a loss of containment of hydrocarbons which may extend to coastlines to obtain advice on the management of cultural sensitivities which may be in the spill trajectory.	Not described in OPP.	Additional control incorporated from the approved Athena Supply Project EP.
CM30: Underwater Cultural Heritage Disturbance Risk Management Measures	EPS30.1: Amplitude Energy will ensure the activity is compliant with the Underwater Cultural Heritage Act 2018 (Underwater Heritage Act) by: • Seabed survey data will be reviewed prior to well construction activities and used to inform equipment laydown locations to avoid impacts to underwater cultural heritage. • Review of relevant seabed survey data will be conducted by a suitably qualified and experienced cultural heritage team. The team will include a marine archaeologist, have familiarity with First Nations cultural landscapes and experience in identifying landscape features from geophysical data. • If cultural heritage is identified, it will be mapped, along with suitable exclusion zone and its location integrated into Activity	CM9: Underwater Cultural Heritage Disturbance Risk Management Measures Cooper Energy Cultural Heritage Disturbance Risk Management Measures acknowledge legislative requirements and establishes the methods by which potential disturbance to cultural heritage is identified including via screening, consultation, and expert advice as required. The measures apply to the offshore project to ensure impacts and risks throughout the project remain within acceptable levels and are managed to ALARP. Cooper Energy will ensure the activity is compliant with the Underwater Cultural Heritage Act 2018 (Underwater Heritage Act) by: • Seabed survey data will be reviewed prior to well construction activities and used to	OPP and EP align on Underwater Cultural Heritage Disturbance risk management.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
	inductions and procedures to ensure it is avoided during Activity. • UCH Review Report will be provided to relevant RAP. • Implementing a process for reporting and managing unexpected finds during the activity, including reporting of any new suspected underwater cultural heritage to DCCEEW (or delegate) within 21 days of discovery.	inform equipment laydown locations to avoid impacts to underwater cultural heritage. • Review of relevant seabed survey data will be conducted by a suitably qualified and experienced cultural heritage team. The team will include a marine archaeologist, have familiarity with First Nations cultural landscapes and experience in identifying landscape features from geophysical data. • If cultural heritage is identified, it will be mapped, along with suitable exclusion zone and its location integrated into Activity inductions and procedures to ensure it is avoided during Activity. • UCH Review Report will be provided to relevant RAP. • Implementing a process for reporting and managing unexpected finds during the activity, including reporting of any new suspected underwater cultural heritage to DCCEEW (or delegate) within 21 days of discovery.	
Control Measures not incorporated into the Annie 2 Development Drilling EP (This EP)			
CM5: Cooper Energy Emissions Management Process	Not Applicable to the Annie 2 Development EP	CM5: Cooper Energy Emissions Management Process. The Cooper Energy Emissions Management Process acknowledges legislative requirements and establishes a systematic process to identify, assess and implement GHG emissions reduction opportunities throughout a project's life cycle. The process sets a continual	These controls are relevant to the Operations phase of the East Coast Supply Project, and will be incorporated accordingly in the revision to the Otway Operations Environment Plan ahead of production from Annie-2 development well.

Annie 2 Development EP		Equivalent CM described in the East Coast Supply Project OPP	Comments
Control	**EPS**		
		improvement cycle such that new technologies and approaches can be incorporated as they are developed. The objectives of the Emissions Management Process are to: • Identify requirements relating to GHG emissions reduction. • Provide a framework for identifying, assessing and implementing emissions reduction opportunities. • Align emissions reduction activities with other business processes.	
	Not Applicable to the Annie 2 Development EP	CM23: Safeguard Mechanism Monitoring Direct and indirect GHG emissions will be monitored throughout the project lifecycle against the threshold established by the Safeguard Mechanism. Liaison with the Clean Energy Regulator will be undertaken if the likelihood of triggering the Safeguard Mechanism becomes apparent.	
	Not Applicable to the Annie 2 Development EP	CM26: NGER Scheme Reporting Operational control-based reporting as part of the national reporting framework for greenhouse gas emissions, energy consumption and energy production to meet the objectives of the NGER Act.	

Table 14-3 summarises the concordance of the proposed Annie-2 development well activities with the activities described in **ECSP OPP**.

The East Coast Project described and approved in the **ECSP OPP**, comprises up to 8 incremental gas development opportunities with associated wells, flowlines and manifolds, which will tie-in to the existing Otway Casino-Henry-Netherby (CHN) Development (known as the 'existing CHN facilities').

The Annie-2 development well EP includes the following phases as described in the OPP (refer Section 4 of **ECSP OPP**):

- Well construction – activities include Mobile Offshore Drilling Unit (MODU) positioning, all drilling operations, blowout preventer (BOP) installation, cementing, subsea trees and completions, clean-up and flowback, well suspension and logging. Only one well is drilled at a time. Multi-well drilling campaigns involve one MODU which drills each well, one well after another (section 4.3.2 of the **ECSP OPP**).
- Support activities – including MODU operations, vessel operations, remotely operated vehicle (ROV) and helicopter operations. Vessel types include saturation diving support vessel, installation vessels, heavy lift vessels (HLV's) and general support vessels for Inspection, Maintenance and Repair (IMR) type activities or supporting the engineering or execution programs. ROV operations may also include autonomous underwater vehicles (AUVs) (section 4.3.6 of the **ECSP OPP**).
- Surveys – activities include geophysical and geotechnical surveys of the proposed locations (section 4.3.1 of the **ECSP OPP**).
- Decommissioning – activities include well abandonment and the decommissioning of infrastructure (contingency in event Annie 2 is not tied into CHN facilities) (Section 4.3.5 of the **ECSP OPP**).

Table 14-3: Concordance of East Coast Supply Project OPP Activity Description and Annie-2 Development Drilling EP Activity Description

Activity	EP Concordance
Location/ Operational Area	Annie is a confirmed resource described in the OPP. Annie 2 is within the operational footprint described in the **ECSP OPP**, refer Section 4.1.1 of the **ECSP OPP**. The cautionary zone in the EP has been increased from 3km as described in the EP to 3.5km. This is based on the 2.5km anchor/ mooring spread, and a 1km buffer. The increase in the size does not change the risk described for in the OPP in regards potential impacts to other marine users, given that the cautionary zone issued via AusCoast warning from AMSA is typically set at 2.5nM (4.6km).
Activity Duration and Timing	The timing described in Section 3.2 of the EP is consistent with Section 4.1.2 of the **ECSP OPP**. Amplitude Energy are progressing with the development of the Annie field as described in the **ECSP OPP**. Annie 2 will be drilled as early as Q2 2026, the **ECSP OPP** Figure 4-3 indicates activities in 2026.
Direct Disturbance Corridor	Table 6-6 of the EP is consistent with Section 4.1.2 of the **ECSP OPP**. Activity durations depicted in Figure 4-2 of the **ECSP OPP** are consistent with Figure 3-3 of the EP.

Activity	EP Concordance
Production & Field Characteristics	The reservoir conditions and gas components for the Annie field and proposed Annie 2 well are consistent, refer Table 4-3 of the **ECSP OPP** and Table 3-3cof this EP.
Description of Activities	Section 3.4 of the EP described the key activities for the Annie 2 development well, which is one of the 15 subsea production wells described for in section 4.2.2 of the **ECSP OPP**. This EP does not include for installation of flowline and umbilical systems (section 4.2.3 & 4.2.4 of the **ECSP OPP**), installation of other subsea infrastructure (section 4.2.5 of the **ECSP OPP**), the tie in, commissioning and operation of the subsea facilities, these will be the subject of future environment plans. The activity description is consistent with the **ECSP OPP**, with this being a single well campaign with an estimated duration of 60 days (section 4.3.2 of the **ECSP OPP**). As described in the **ECSP OPP**, if successful, once completed the Annie-2 development well will be suspended and monitored in accordance with the WOMP ahead of tie in, commissioning and operations activities (separate environment plans). The drilling of Annie-2 well does not require the contingent use of Synthetic Based drilling fluids (SBDF), as such commitments for the use and management of SBDF have not been included in this EP. Support activities described in Section 3.4.5 of the EP are consistent with those described in section 4.3.6 of the **ECSP OPP**. Section 3.4.6 of the EP is consistent with section 4.3.5 of the **ECSP OPP** in regards plug and abandonment of the Annie 2 well.

Appendix 2 - EP Change Register

Date	Rev	Originator	Section Changed	Change	MOC#	Trigger Resubmission?
11.09.25	0	SM	n/a	Original submission	n/a	No

Appendix 3 - Environment Regulations Requirements

1.0 Requirements

1.1 OPGGS Act Requirements

The OPGGS Act provides the regulatory framework for all offshore petroleum activities within Commonwealth waters. The Act ensures that activities are undertaken in a way that is:

- Consistent with the principles of ecologically sustainable development as defined in section 3A of the EPBC Act.
- Reduces environmental impacts and risks of the activity to as low as reasonably practicable (ALARP).
- Ensures that environmental impacts and risks of the activity are acceptable.

There are several regulations under the Act including:

- OPGGS (Safety) Regulations 2024
- OPGGS (Resource Management and Administration) Regulations 2011
- OPGGS(E)R 2023.

Table 1-1 specifies the requirements of the OPGGS(E)R in relation to the content of this EP.

Table 1-1: Requirements of the Regulations

OPGGS(E) R Section	Description	Document Section
21 (1)	A comprehensive description of the activity including: • The location or locations of the activity. • General details of the development drilling and layout of any facility that is used in undertaking the activity. • An outline of the operational details of the activity and proposed timetables for undertaking the activity. • Any additional information relevant to consideration of environmental impacts and risks of the activity.	Section 3
21 (2) and (3)	Describe the existing environment that may be affected by the activity and include details of the relevant values and sensitivities (if any) of that environment. Relevant values and sensitivities may include any of the following: • world Heritage property values • national Heritage property values • ecological character of a declared Ramsar wetland • listed threatened species or ecological communities • listed migratory species • values and sensitivities which exist in, or in relation to, part or all of: – Commonwealth marine areas – or Commonwealth land.	Section 4
21 (4), 22 (16)	Describe the requirements, including legislation requirements, that apply to the activity and are relevant to the environmental	Section 2 Appendix 3

OPGGS(E) R Section	Description	Document Section
	management of the activity and demonstrate how those requirements will be met. The implementation strategy must comply with the Act, this instrument, any other regulations made under the Act, and any other environmental legislation applying to the activity.	
21 (5) and (6)	The environment plan must include: • Details of the environmental impacts and risks of the activity. • An evaluation of all the environmental impacts and risks, appropriate to the nature and scale of each impact or risk. • Details of the control measures that will be used to reduce the impacts and risks of the activity to as low as reasonably practicable and an acceptable level. To avoid doubt, the evaluation mentioned above must evaluate all of the environmental impacts and risks arising directly or indirectly from: • All operations of the activity. • Any potential emergency conditions, whether resulting from an accident or any other cause.	Section 6
21 (7)	The environment plan must: • Set environmental performance standards for the control measures. • Set out the environmental performance outcomes for the activity against which the performance of the titleholder in protecting the environment is to be measured. • Inclusion of measurement criteria for environmental performance outcomes and environmental performance standards.	Section 10
22 (1) and (7)	The environment plan must: • Contain an implementation strategy for the activity in accordance with this section. The implementation strategy must: • State when the titleholder will report to NOPSEMA in relation to the titleholder's environmental performance for the activity. The interval between reports must not be more than 12 months.	Section 12
22 (2)	The implementation strategy must contain a description of the environmental management system for the activity, including specific measures to be used to ensure that, for the duration of the activity: • The environmental impacts and risks of the activity continue to be identified and reduced to a level that is as low as reasonably practicable; and • Control measures detailed in the environment plan are effective in reducing the environmental impacts and risks of the activity to as low as reasonably practicable and an acceptable level.	Section 12

OPGGS(E) R Section	Description	Document Section
	• Environmental performance outcomes and environmental performance standards in the environment plan are being met.	
22 (3) and (4)	The implementation strategy must: • Establish a clear chain of command, setting out the roles and responsibilities of employees and contractors in relation to the implementation, management, and review of the environment plan, including during emergencies or potential emergencies. • Include measures to ensure that each employee or contractor working on, or in connection with, the activity is aware of the employee's or contractor's responsibilities in relation to the environment plan, including during emergencies or potential emergencies, and has the appropriate competencies and training.	Section 12
22 (5), 51	The implementation strategy must provide for sufficient monitoring, recording, audit, management of non-conformance and review of the titleholder's environmental performance and the implementation strategy to ensure that the environmental performance outcomes and environmental performance standards in the environment plan are being met. Environmental performance report must be submitted to NOPSEMA at the times or intervals provided for in the environment plan in force for the activity.	Section 12
22 (6)	The implementation strategy must provide for sufficient monitoring of, and maintaining a quantitative record of, emissions and discharges (whether occurring during normal operations or otherwise), such that the record can be used to assess whether the environmental performance outcomes and environmental performance standards in the environment plan are being met.	Section 12
22 (8)	The implementation strategy must contain an oil pollution emergency plan and provide for the updating of the plan.	Offshore Victoria OPEP (VIC-ER-EMP-0001) Section 12
22 (9)	The oil pollution emergency plan must include adequate arrangements for responding to and monitoring oil pollution, including the following: • The control measures necessary for timely response to an emergency that results or may result in oil pollution. • The arrangements and capability that will be in place, for the duration of the activity, to ensure timely implementation of the control measures, including arrangements for ongoing maintenance of response capability. • The arrangements and capability that will be in place for monitoring the effectiveness of the control measures and ensuring that the environmental performance standards for the control measures are met.	Section 12 (detail within Offshore Victoria OPEP ((VIC-ER-EMP-0001))

OPGGS(E) R Section	Description	Document Section
	• The arrangements and capability in place for monitoring oil pollution to inform response activities	
22 (10) and (11)	The implementation strategy must provide for monitoring of impacts to the environment from oil pollution and response activities that: • Is appropriate to the nature and scale of the risk of environmental impacts of the activity. • Is sufficient to inform any remediation activities. The implementation strategy must include information demonstrating that the response arrangements in the oil pollution emergency plan are consistent with the national system for oil pollution preparedness and response.	Section 12
22 (12)	The implementation strategy must include arrangements for testing the response arrangements in the oil pollution emergency plan. The testing arrangements must be appropriate to the response arrangements and to the nature and scale of the risk of oil pollution for the activity.	Section 12 (detail within Offshore Victoria OPEP ((VIC-ER-EMP-0001))
22 (13) and (14)	The testing arrangements must include: • (a) a statement of the objectives of testing • (b) a proposed schedule of tests • (c) mechanisms to examine the effectiveness of response arrangements against the objectives of testing • (d) mechanisms to address any recommendations arising from tests. For the purposes of paragraph (13)(b), the proposed schedule of tests must provide for the following: • Testing the response arrangements when they are introduced. • Testing the response arrangements when they are significantly amended. • Testing the response arrangements not later than 12 months after the most recent test. • If a new location for the activity is added to the environment plan after the response arrangements have been tested, and before the next test is scheduled to be conducted—testing the response arrangements in relation to the new location as soon as practicable after it is added to the plan. • If a facility becomes operational after the response arrangements have been tested and before the next test is scheduled to be conducted—testing the response arrangements in relation to the facility when it becomes operational.	Section 12 (detail within Offshore Victoria OPEP ((VIC-ER-EMP-0001))
24 (c), 48 and 50	The environment plan must include: • Details of reportable incidents in relation to the activity, procedures for reporting and notifying reportable and recordable incidents.	Section 12
24 (a) and (b)	The environment plan must include:	Section 11

OPGGS(E) R Section	Description	Document Section
	• A statement of the titleholder's corporate environmental policy. • A report on all consultations under section 25 of any relevant person by the titleholder, that contains: – A summary of each response made by a relevant person. – An assessment of the merits of any objection or claim about the adverse impact of each activity to which the environment plan relates. – A statement of the titleholder's response, or proposed response, if any, to each objection or claim. – A copy of the full text of any response by a relevant person.	Section 12 Appendix 8
22 (15), 25 (1), (2), (3) and (4)	Consultation with relevant authorities, persons and organisations must occur during the preparation of an environment plan. The implementation strategy must provide for appropriate consultation with: • Relevant authorities of the Commonwealth, a State, or a Territory. • Other relevant interested persons or organisations. 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. The titleholder must allow a relevant person a reasonable period for the consultation. The titleholder must tell each relevant person the titleholder consults that: • The relevant person may request that particular information the relevant person provides in the consultation not be published. • Information subject to such a request is not to be published under this Part.	Section 11
23 (1), (2) and (3)	The environment plan must include the following details for the titleholder: • Name, business address, telephone number (if any), fax number (if any), email address (if any). • An ACN (within the meaning of the Corporations Act 2001). The environment plan must also include the following details for the titleholder's nominated liaison for the activity: Name, business address, telephone number (if any), fax number (if any), email address (if any). The environment plan must include arrangements for notifying NOPSEMA of any of the following: • A change in the titleholder. • A change in the titleholder's nominated liaison for the activity.	Section 1.6 Section 11

OPGGS(E) R Section	Description	Document Section
	• A change in the contact details for either the titleholder or the nominated liaison.	

1.2 EPBC Act Requirements

This EP considers the impacts to matters of national environmental significance (MNES) protected under Part 3 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). MNES relevant to the EP include:

- listed threatened species and ecological communities
- listed migratory species (protected under international agreements)
- Commonwealth marine areas
- World Heritage places
- National Heritage places
- Commonwealth Heritage places
- wetlands of international importance (listed under the Ramsar Convention).

Relevant requirements associated with the EPBC Act, related policies, guidelines, plans of management, recovery plans, threat abatement plans, and other relevant advice issued by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) are detailed in Section 4.0 as part of the description of the existing environment.

The requirements identified within management/recovery plans and conservation advice have been considered in the development of the EP and used as guidance in developing the management of proposed activities.

Table 1-2 outlines the management plans, recovery plans and conservation advice of listed species identified in Section 4.0 and highlights any key threats or conservation actions relevant to the proposed activities.

Table 1-3 provides guidance on the 'key terms' within the Blue Whale Conservation Management Plan (CMP) and how they are applied within this EP. Guidance and advice have been considered when assessing the impacts and risks, acceptability and in developing environmental performance outcomes (EPOs).

Table 1-2: Recovery Plans, Threat Abatement and Species Conservation Advice

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Fish					
Australian Grayling	National Recovery Plan for the Australian Grayling (Backhouse et al., 2008)	• Vulnerable	The overall objective of recovery is to minimise the probability of extinction of the Australian grayling in the wild, and to increase the probability of important populations becoming self-sustaining in the long term. Relevant specific objectives within the lifespan of the recovery plan, with a particular focus on riverine habitats, are: • Protect and restore habitat for Australian grayling. • Investigate and manage threats to populations and habitats.	Climate Change	No explicit relevant management actions; climate change identified as a threat.
				Poor Water Quality	Manage water quality where Australian Grayling occurs to maintain waters free of significant levels of nutrient, sediment, pesticide, and other pollutants, consistent with the ANZECC guidelines for water quality.
	Conservation Advice *Prototroctes maraena* Australian Grayling (TSSC, 2021)		No explicit relevant objectives	Climate Change	No explicit relevant management actions; climate change identified as a threat.
Black Rockcod	Approved Conservation Advice for *Epinephelus daemelii* (Black Rock-cod) (DSEWPaC, 2012c)	• Vulnerable	No explicit relevant objectives	Climate Change	No explicit relevant management actions; climate change identified as a threat.
	National recovery plan for the Dwarf Galaxias	• Endangered	No explicit relevant objectives	Climate Change	

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Eastern Dwarf Galaxias	(*Galaxiella pusilla*) (Saddlier et al., 2010a)				No explicit relevant management actions; climate change identified as a threat.
	Conservation Advice for *Galaxiella pusilla* (dwarf galaxias) (DCCEEW, 2023b)				
Variegated Pygmy Perch	National recovery plan for the Variegated Pygmy Perch (*Nannoperca variegate*) (Saddlier and Hammer, 2010b)	• Vulnerable	No explicit relevant objectives	Climate Change	No explicit relevant management actions; climate change identified as a threat.
Yarra Pygmy Perch	National recovery plan for the Yarry Pygmy Perch (*Nannoperca obscura*) (Saddlier and Hammer, 2010c)	• Endangered	No explicit relevant objectives	Climate Change	No explicit relevant management actions; climate change identified as a threat.
	Approved Conservation advice for *Nannoperca obscura* (Yarra pygmy perch) (DCCEEW, 2023c)				
Handfish	Recovery Plan for Three Handfish Species: Spotted Handfish (*Brachionichthys hirsutus*), Red Handfish (*Thymichthys politus*), and Ziebell's Handfish	Critically Endangered: • Red handfish • Spotted handfish • Vulnerable:	No explicit relevant objectives	Pollution and siltation of waterways	No explicit relevant management actions; pollution and siltation of waterways identified as a threat.
				Climate Change	No explicit relevant management actions; climate change identified as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
	(*Branchiopsilus ziebelli*) (CoA, 2015b)	• Ziebell's handfish			
	Approved Conservation Advice for T*hymichthys politus* (Red Handfish) (DSEWPaC, 2012d)	• Critically Endangered	No explicit relevant objectives	Habitat Degradation	Ensure there is no disturbance to areas where the red handfish occurs, excluding necessary actions to manage the conservation of the species. Manage any known, potential, or emerging threats including introduced species
White Shark	Recovery Plan for the White Shark (*Carcharodon carcharias*) (DSEWPaC, 2013a)	• Vulnerable • Migratory	The overarching objective of this recovery plan is to assist the recovery of the white shark in the wild throughout its range in Australian waters with a view to: • Improving the population status leading to future removal of the white shark from the threatened species list of the EPBC Act. • Ensuring that anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future. The specific objectives of the recovery plan (relevant to industry) are: • Objective 7: Continue to identify and protect habitat critical to the survival of the white shark and	Habitat modification	No explicit relevant management actions; habitat modification identified as a threat.
				Climate Change	No explicit relevant management actions; climate change identified as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
			minimise the impact of threatening processes within these areas.		
Grey Nurse Shark (east coast population)	Recovery Plan for the Grey Nurse Shark (*Carcharias Taurus*) (DoE, 2014)	• Critically Endangered	The long-term objective of this recovery plan is to assist the recovery of the grey nurse shark in the wild, throughout its range in Australian waters, with an aim to improve its population status and ensure that anthropological activities do not hinder the recovery of the grey nurse shark. The specific objectives of this recovery plan (relevant to industry) are: • Objective 8: Continue to identify and protect critical habitat to the survival of the grey nurse shark and reduce the impact of threatening processes within these areas.	Pollution	Review and assess the potential threats of introduced species, pathogens, and pollutants.
				Habitat Modification	Review the level and spatial extent of protection measures at key aggregation sites to ensure appropriate levels of protection, and a consistent approach to the designation and implementation of protective measures, are applied. Use Biologically Important Areas (BIA) to help inform the development of appropriate conservation measures, including through the application of advice in the marine bioregional plans on the types of actions which are likely to have a significant impact on the species and updating such conservation measures as new information becomes available.
				Climate Change	No explicit relevant management actions; climate change identified as a threat.
Whale Shark	Approved Conservation Advice for *Rhincodon typus* (Whale Shark) (TSSC, 2015c)	Vulnerable • Migratory	No explicit relevant objectives	Vessel Strike	Minimise offshore developments and transit time of large vessels in areas close to marine features likely to correlate with whale shark aggregations.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
				Pollution	No explicit relevant management actions; pollution (marine debris) identified as a threat.
				Climate Change	No explicit relevant management actions; climate change identified as a threat.
Shorebirds and Seabirds					
Threatened Albatross and Petrel species	National Recovery Plan for Albatrosses and Petrels (2022) (CoA, 2022)	Endangered: Chatham albatross • Grey-headed albatross • Northern royal albatross • Shy albatross • Gould's petrel • Southern giant petrel Vulnerable: • Antipodean albatross • Black-browed albatross • Buller's albatross • Campbell albatross	Overall objective: To ensure the long-term survival and recovery of albatross and giant petrel populations breeding and foraging in Australian jurisdiction by reducing or eliminating human related threats at sea and on land. Specific objectives: • Land-based threats to the survival and breeding success of albatrosses and giant petrels breeding within areas under Australian jurisdiction are quantified and reduced. • Marine-based threats to the survival and breeding success of albatrosses and giant petrels foraging in waters under Australian jurisdiction are quantified and reduced.	Marine pollution	Undertake, as feasible, monitoring of breeding colonies for marine debris, plastics and marine pollution impacts including, as a priority: • Incidence of oiled birds at nest. • Effect of plastics and marine pollution. • Develop baseline measures of levels of heavy metals and persistent organic pollutants. • Risk-based response strategies are implemented where appropriate, for marine pollution incidents that have the potential to affect breeding populations.
				Marine infrastructure interactions	No explicit relevant management actions; marine infrastructure interactions identified as a threat.
				Climate Change	No explicit relevant management actions; climate change identified as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
		• Indian, yellow-nosed albatross • Northern giant petrel • Salvin's albatross • Sooty albatross • Southern royal albatross • White-capped albatross.			
All Migratory Shorebirds	Wildlife Conservation Plan for Migratory Shorebirds (CoA, 2015a).	N/A	Anthropogenic threats to migratory shorebirds in Australia are minimised or, where possible, eliminated.	Habitat degradation / modification (oil pollution)	No explicit relevant management actions; identified as a threat.
				Anthropogenic disturbance	Investigate the significance of cumulative impacts on migratory shorebird habitat and populations in Australia. Ensure all areas important to migratory shorebirds in Australia continue to be considered in development assessment processes (specifically for coastal developments).
				Climate Change	Investigate the impacts of climate change on migratory shorebird habitat and populations in Australia.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
All Seabirds	Wildlife Conservation Plan for Seabirds (CoA, 2020)	N/A	Seabirds and their habitats are protected and managed in Australia.	Pollution (marine debris, light, water)	Enhance contingency plans to prevent and/or respond to environmental emergencies that have an impact on seabirds and their habitats.
				Habitat loss and degradation from pollution	No explicit relevant management actions; identified as a threat.
				Anthropogenic disturbance	Ensure all areas of important habitat for seabirds are considered in the development assessment process. Manage the effects of anthropogenic disturbance to seabird breeding and roosting areas.
				Invasive species	Ensure seabirds are protected from the adverse effects of invasive species.
				Climate Change	No explicit relevant management actions; climate change identified as a threat.
All Seabirds and Migratory Shorebirds	National Light Pollution Guidelines for Wildlife	N/A	Lighting objectives will need to consider the regulatory requirements and Australian standards relevant to the activity, location and wildlife present. Objectives should be described in terms of specific locations and times for which artificial light is necessary. Consideration should be given to whether colour differentiation is required and if some areas should remain dark – either to contrast with lit	Light pollution	Best practice lighting design incorporates the following design principles: • Start with natural darkness and only add light for specific purposes. • Use adaptive light controls to manage light timing, intensity and colour. • Light only the object or area intended – keep lights close to the ground, directed and shielded to avoid light spill.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
			areas or to avoid light spill. Where relevant, wildlife requirements should form part of the lighting objectives. A lighting installation will be deemed a success if it meets the lighting objectives (including wildlife needs) and areas of interest can be seen by humans clearly, easily, safely and without discomfort.		• Use the lowest intensity lighting appropriate for the task. • Use non-reflective, dark-coloured surfaces. Use lights with reduced or filtered blue, violet and ultra-violet wavelengths.
Little Tern	Conservation Advice for *Sternula albifrons* (little tern) (DCCEEW, 2025b)	• Vulnerable	The primary conservation objectives for the conservation advice are; • Retain breeding colonies across the species' range by managing threats to the extent possible, including by facilitating breeding site re-positioning if needed, and achieve a stable or increasing population trend in both subpopulations. • Increase breeding success in existing breeding colonies in all range states through appropriate management of threats.	Climate Change	No explicit relevant management actions; climate change identified as a threat. Disturbance to nesting birds by activities such as use of boats and jet skis close to shore identified as a threat. This is not applicable to the activities in this EP.
Sooty Shearwater	Conservation Advice for *Ardenna grisea* (sooty shearwater). (DCCEEW, 2023d)	• Vulnerable • Migratory • Marine	The primary conservation objectives for the conservation advice are: • To increase the trend of Australian breeding population.	Climate Change	No explicit relevant management actions; climate change identified as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
			• At-sea losses within Australia remain minimal.		
Australasian Bittern	Approved Conservation Advice for *Botaurus poiciloptilus* (Australasian bittern) (TSSC, 2019a)	• Endangered	The objective of this conservation advice is to provide guidance for actions that will expand the range and the number of Australasian bitterns in Australia.	Habitat loss and degradation	No explicit relevant management actions; habitat loss and degradation recognised as a threat.
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
	National Recovery Plan for the Australasian Bittern (*Botaurus poiciloptilus*) (DCCEEW, 2023n)		The objective of this recovery plan is to demonstrate, by 2032, an increasing trend (compared to 2020 baseline counts) in the number of mature individuals being recorded in annual surveys at key locations, and to ensure that habitat critical to the survival of the Australasian Bittern is protected and managed to meet the ecological requirements of the species.	Climate Change	No explicit relevant management actions; climate change recognised as a threat.
				Reduced water quality	No explicit relevant management actions; reduced water quality recognised as a threat.
Red Knot	Approved Conservation Advice for *Calidris canutus* (Red Knot) (DCCEEW, 2024f)	• Vulnerable • Migratory • Marine	Minimise further loss of habitat critical to the survival of red knot throughout Australia (including habitat predicted to become habitat critical in the future because of climate change)	Acute Pollution	No explicit relevant management actions; oil pollution recognised as a threat.
				Habitat loss, disturbance, and modifications	Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Great Knot	Conservation Advice for *Calidris tenuirostris* (great knot) (DCCEEW, 2024g)	• Vulnerable • Migratory • Marine	Minimise further loss of habitat critical to the survival of great knot throughout Australia (including habitat predicted to become habitat critical in the future because of climate change)	Acute Pollution	No explicit relevant management actions; oil pollution recognised as a threat.
				Habitat loss, disturbance, and modifications	Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Curlew Sandpiper	Approved Conservation Advice for *Calidris ferruginea* (Curlew Sandpiper) (TSSC, 2015d)	• Critically Endangered • Migratory • Marine	Minimise further loss of habitat critical to the survival of curlew sandpiper throughout Australia (including habitat predicted to become habitat critical in the future because of climate change).	Acute and chronic pollution	No explicit relevant management actions; oil spill is recognised as a threat.
				Habitat loss, disturbance, and modifications	Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Pilotbird	Conservation Advice for *Pycnoptilus floccosus* (Pilotbird)	• Vulnerable	No explicit relevant objectives	NA	NA

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Sharp-tailed Sandpiper	Approved Conservation Advice for Calidris acuminata (sharp-tailed sandpiper) (DCCEEW, 2024h)	• Vulnerable • Migratory • Marine	Australian Objective: Minimise further loss of habitat critical to the survival of the sharp-tailed sandpiper throughout Australia.	Habitat loss, degradation, and fragmentation	Ensure that future development projects avoid any activities that disproportionately affect the upper-tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Terek Sandpiper	Approved Conservation Advice for Xenus cinereus (Terek sandpiper) (DCCEEW, 2024i)	• Vulnerable • Migratory • Marine	Australian Objective: Minimise further loss of habitat critical to the survival of the terek sandpiper throughout Australia.	Habitat loss, degradation, and fragmentation	Ensure that future development projects avoid any activities that disproportionately affect the upper-tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Greater Sand Plover	Approved Conservation Advice for *Charadrius leschenaultia* (Greater Sand Plover) (TSSC, 2016a)	• Vulnerable • Migratory • Marine	No explicit relevant objectives	Habitat loss and degradation	Identifies research priorities and the need for actions to prevent destruction of key breeding and migratory staging sites. Protect important habitat in Australia.
				Pollution and contamination	No explicit relevant management actions; pollution / contaminants recognised as a threat.
				Introduced Species	No explicit relevant management actions; introduced species recognised as a threat.
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Lesser Sand Plover	Approved Conservation Advice for *Charadrius mongolus* (Lesser Sand Plover) (TSSC, 2016b)	• Endangered • Migratory • Marine	No explicit relevant objectives	Habitat loss and degradation	No explicit relevant management actions; Habitat loss and degradation is identified as a threat.
				Pollution/contamination impacts	No explicit relevant management actions; Climate Change is identified as a threat.
				Introduced species	No explicit relevant management actions; Pollution/Contamination identified as a threat.
				Direct mortality	No explicit relevant management actions; Disturbance identified as a threat.
				Climate Change	No explicit relevant management actions; Direct morality is identified as a threat.
Grey Plover	Approved Conservation Advice for *Pluvialis squatarola* (grey plover) (DCCEEW, 2024j)	• Vulnerable • Migratory • Marine	Minimise further loss of habitat critical to the survival of grey plover throughout Australia (including habitat predicted to become habitat critical to survival in the future because of climate change).	Habitat Loss	Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.
				Climate Change	No explicit relevant management actions; Direct morality is identified as a threat.
Blue Petrel	Approved Conservation Advice for *Halobaena caerulea* (Blue Petrel) (TSSC 2015e)	• Vulnerable • Marine	No explicit relevant objectives	Habitat Loss, Disturbance and Modification	No explicit relevant management actions; habitat loss, disturbance and modification recognised as a threat.
		• Endangered	Minimise further loss of habitat critical to the survival of grey plover	Habitat loss, degradation	Ensure that future development projects avoid any activities that disproportionately

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Nunivak Bar-tailed Godwit	Conservation Advice for *Limosa lapponica baueri* (Alaskan bar-tailed godwit) (DCCEEW, 2024k)		throughout Australia (including habitat predicted to become habitat critical to survival in the future because of climate change).	and fragmentation	affect the upper-tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies and site managers.
				Acute Pollution	No explicit relevant management actions; oil pollution recognised as a threat.
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Eastern Curlew	Approved Conservation Advice for *Numenius madagascariensis* (Eastern Curlew) (DCCEEW, 2023o)	• Critically Endangered • Migratory • Marine	Minimise further loss of habitat critical to the survival of far eastern curlew throughout Australia (including habitat predicted to become habitat critical in the future because of climate change).	Acute and chronic pollution	No explicit relevant management actions; oil spill is recognised as a threat.
				Habitat loss, disturbance, and modifications	Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Fairy Prion (southern)	Approved Conservation Advice for *Pachyptila subantarctica* (Fairy Prion (southern)) (TSSC, 2015f)	• Vulnerable	No explicit relevant objectives	Habitat Loss, Disturbance and Modification	No explicit management actions; habitat loss, disturbance and modification recognised as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Australian Painted Snipe	Approved Conservation Advice for *Rostratula australis* (Australian painted snipe) (DSEWPaC, 2013b)	• Endangered • Marine	No explicit relevant objectives	Habitat loss disturbance and modifications	Habitat recovery actions are a priority.
	National Recovery Plan for the Australian Painted Snip (*Rostratula australis*) (DCCEEW, 2022b)		By 2032, sustain a positive population trend (compared to 2020 baseline counts) in the number of mature individuals of the Australian Painted Snipe.	Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Australian Fairy Tern	Approved Conservation Advice for *Sternula nereis* (Australian Fairy Tern) (DSEWPaC, 2011b)	• Vulnerable	No explicit relevant objectives	Oil spills, particularly in Victoria	Ensure appropriate oil spill contingency plans are in place for the subspecies' breeding sites that are vulnerable to oil spills.
	National Recovery Plan for (*Sternula nereis nereis*) (Australian Fairy Tern) (DAWE, 2020b)		Long-term Vision: The Australian fairy tern population has increased in size to such an extent that the species no longer qualifies for listing as threatened under any of the EPBC Act listing criteria.	Habitat degradation and loss of breeding habitat	No explicit management actions; habitat degradation and loss of breeding habitat recognised as a threat.
				Pollution	No explicit management actions; pollution recognised as a threat.
				Climate variability and change	No explicit management actions; climate change recognised as a threat.
Grey-headed Albatross	Approved Conservation Advice for *Thalassarche*	• Endangered	No explicit relevant objectives	Pollution	No explicit management actions; pollution recognised as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
	Chrysostoma, Greyheaded Albatross) (DEWHA, 2009)	• Migratory • Marine		Entanglement in Marine Debris	No explicit management actions; marine debris recognised as a threat.
				Climate Change	No explicit management actions; climate change recognised as a threat.
Shy Albatross	Conservation Advice *Thalassarche cauta* Shy Albatross (TSSC, 2020a)	• Endangered • Migratory • Marine	Refer to objectives in the National Recovery Plan for Threatened Albatrosses and Giant Petrels 2022	Marine Pollution	No explicit management actions; marine pollution recognised as a threat.
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Hooded Plover (eastern)	Approved Conservation Advice for *Thinornis rubricollis* (Hooded Plover, Eastern) (TSSC, 2014)	• Vulnerable • Marine	Primary Conservation Objectives: • Achieve stable numbers of adults in the population, and maintain a stable number of occupied and active breeding territories. • Maintain, enhance and restore habitat, and integrate the subspecies' needs into coastal planning.	Oil spills	Prepare oil spill response plans to ensure effective rehabilitation of oiled birds.
				Entanglement and Ingestion of Marine Debris	Reduce in-shore marine debris
				Invasive Species	No explicit management actions; invasive species recognised as a threat.
				Climate Change	No explicit management actions; climate change recognised as a threat.
Gould's Petrel	Gould's Petrel (*Pterodroma leucoptera leucoptera*) Recovery Plan (DEC, 2006)	• Endangered	The overall objective of the Gould's petrel recovery effort is for Gould's petrel to be down listed from endangered to vulnerable by 2011. Specific recovery objectives are:	None identified	NA

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
			To identify and manage the threats operating at sites where the subspecies occurs		
Herald Petrel	Conservation Advice *Pterodroma heraldica* (Herald petrel) (TSSC, 2015g)	• Critically Endangered	No explicit relevant objectives	None identified	NA
Soft-plumage Petrel	Approved Conservation Advice for *Pterodroma mollis* (Soft-plumaged Petrel) (TSSC, 2015h)	• Vulnerable • Marine	No explicit relevant objectives	None identified	NA
Kermadec Petrel (western)	Lord Howe Island Biodiversity Management Plan (DECC, 2008)	• Vulnerable	No explicit relevant objectives	None identified	NA
	Norfolk Island Region Threatened Species Recovery Plan (DCCEEW, 2025c)		No explicit relevant objectives	None identified	NA
White-bellied Storm Petrel (Tasman Sea)	Lord Howe Island Biodiversity Management Plan (DECC, 2008)	• Vulnerable	No explicit relevant objectives	None identified	NA
Swift Parrot	National Recovery Plan for the Swift Parrot (*Lathamus discolor*) (DCCEEW, 2024l)	• Critically Endangered • Marine	By 2032, anthropogenic threats to Swift Parrot are demonstrably reduced.	Climate Change	No explicit relevant management actions; climate change recognised as a threat

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
	Conservation Advice *Lathamus discolor* Swift Parrot (TSSC, 2016c)		No explicit relevant objectives	None identified	NA
Orange-bellied Parrot	National Recovery Plan for the Orange-bellied Parrot (*Neophema chrysogaster*) (DELWP, 2016)	• Critically Endangered • Marine	The three primary objectives of this Recovery Plan are based on the recovery strategy outlined above, while the fourth, supporting objective is essential in order to achieve the three primary objectives: • Objective 1. To achieve a stable or increasing population in the wild within five years. • Objective 2. To increase the capacity of the captive population, both to support future releases of captive-bred birds to the wild and to provide a secure long term insurance population. • Objective 3. To protect and enhance habitat to maintain, and support growth of, the wild population. • Objective 4. To ensure effective adaptive implementation of the plan.	Habitat degradation and modification	Retain habitat Manage threats to habitat quality Monitor the wild population and habitat
				Barriers to migration and movement	No explicit relevant management actions; barriers to migration recognised as a threat.
				Climate Change	No explicit relevant management actions; climate change impacts recognised as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Grey Falcon	Conservation Advice *Falco hypoleucos* Grey Falcon (TSSC, 2020b)	• Vulnerable	No explicit relevant objectives	Climate Change	No explicit relevant management actions; climate change impacts recognised as a threat.
White-throated Needletail	Conservation Advice *Hirundapus caudacutus* White-throated Needletail (TSSC, 2019b)	• Vulnerable • Migratory • Marine	No explicit relevant objectives	NA	NA
Common Greenshank	Conservation Advice for *Tringa nebularia* (common greenshank) (DCCEEW, 2024m)	• Endangered • Migratory • Marine	Minimise further loss of habitat critical to the survival of common greenshank throughout Australia (including habitat predicted to become habitat critical to the survival of the species in the future because of climate change).	Habitat loss, degradation and fragmentation	Ensure that future development projects avoid any activities that disproportionately affect the upper-tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies and site managers.
				Acute Pollution	No explicit relevant management actions; acute recognised as a threat.
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Black-tailed Godwit	Conservation Advice for *Limosa limosa* (black-tailed godwit). (DCCEEW, 2024n)	• Endangered • Migratory • Marine	Minimise further loss of habitat critical to the survival of black-tailed godwit throughout Australia (including habitat predicted to become habitat critical to the survival of the species in the future because of climate change).	Habitat loss, degradation and fragmentation	Ensure that future development projects avoid any activities that disproportionately affect the upper-tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies and site managers.
				Acute Pollution	No explicit relevant management actions; acute recognised as a threat.
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Latham's Snipe	Conservation Advice for *Gallinago hardwickii* (Latham's snipe) (DCCEEW, 2024o)	• Vulnerable • Migratory • Marine	Minimise further loss of habitat critical to the survival of Latham's snipe throughout Australia (including habitat predicted to become habitat critical to the survival of the species in the future because of climate change).	Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Ruddy Turnstone	Conservation Advice for *Arenaria interpres* (ruddy turnstone) (DCCEEW, 2024p)	• Vulnerable • Migratory • Marine	Minimise further loss of habitat critical to the survival of ruddy turnstone throughout Australia (including habitat predicted to become habitat critical to the survival of the species in the future because of climate change).	Habitat loss, degradation and fragmentation	Ensure that future development projects avoid any activities that disproportionately affect the upper-tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies and site managers.
				Acute Pollution	No explicit relevant management actions; acute recognised as a threat.
				Climate Change	No explicit relevant management actions; climate change recognised as a threat.
Blue-winged Parrot	Conservation Advice for *Neophema chrysostoma* (blue-winged parrot) (DCCEEW, 2023e)	• Vulnerable • Marine	No explicit relevant objectives	Habitat loss, degradation and fragmentation	No explicit relevant management actions; habitat loss, degradation and fragmentation recognised as a threat.
				Climate change	No explicit relevant management actions; climate change recognised as a threat.
King Island Brown Thornbill	Conservation Advice for *Acanthiza pusilla magnirostris* (King Island brown thornbill) (DCCEEW, 2023f)	• Endangered	No explicit relevant objectives	NA	NA

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
	King Island Biodiversity Management Plan (DPIPWE, 2012)		No explicit relevant objectives	NA	NA
King Island Scrubtit	Conservation Advice for *Acanthornis magna greeniana* (King Island scrubtit) (DCCEEW, 2023g)	• Critically Endangered	No explicit relevant objectives	NA	NA
	King Island Biodiversity Management Plan (DPIPWE, 2012)		No explicit relevant objectives	NA	NA
Regent Honeyeater	National Recovery Plan for the Regent Honeyeater (*Anthochaera phrygia*) (DoE, 2016)	• Critically Endangered	No explicit relevant objectives	NA	NA
	Conservation Advice *Anthochaera phrygi*a (Regent honeyeater) (TSSC, 2015i)		No explicit relevant objectives	NA	NA
Southern Whiteface	Conservation Advice for *Aphelocephala leucopsis* (southern whiteface) (DCCEEW, 2023h)	• Vulnerable	No explicit relevant objectives	NA	NA
Tasmanian Wedge-tailed Eagle	Threatened Tasmanian Eagles Recovery Plan 2006-2010	• Endangered	Minimising both the modification of foraging habitat and the occurrence of human-related mortality with the ultimate goal of an increase in the population size and stability	Pollution; specifically oiling	No explicit relevant management actions; oiling recognised as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
	(Threatened Species Section, 2006)				
Gang-gang Cockatoo	Conservation Advice for *Callocephalon fimbriatum* (Gang-gang Cockatoo) (DAWE, 2022a)	• Endangered	No explicit relevant objectives	NA	NA
South-eastern Red-tailed Black-Cockatoo	National Recovery Plan for the South-Eastern Red-tailed Black-Cockatoo *Calyptorhynchus banksii graptogyne* (CoA, 2007)	• Endangered	No explicit relevant objectives	NA	NA
South-eastern Glossy Black-Cockatoo	Conservation Advice for *Calyptorhynchus lathami lathami* (South-eastern Glossy Black Cockatoo) (DCCEEW, 2022a)	• Vulnerable	No explicit relevant objectives	NA	NA
Tasmanian Azure Kingfisher	Conservation Advice for *Ceyx azureus diemenensis* (Tasmanian Azure Kingfisher) (DEWHA, 2010b)	• Endangered	No explicit relevant objectives	Habitat Loss, Disturbance and modification	Minimise disturbance to terrestrial and aquatic components of the Tasmanian azure kingfisher's habitat in areas where the subspecies occurs, including necessary actions to manage the conservation of the subspecies.
Brown Treecreeper (south-eastern)	Conservation Advice for *Climacteris picumnus victoriae* (brown treecreeper (south-eastern)) (DCCEEW, 2023i)	• Vulnerable	The primary conservation outcome of this conservation advice is to observe stable or increasing populations across the range.	Climate Change	No explicit relevant management actions; climate change recognised as a threat

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Eastern Bristlebird	National Recovery Plan for Eastern Bristlebird (*Dasyornis brachypterus*) (OEH, 2012)	• Endangered	No explicit relevant objectives	NA	NA
Regent Honeyeater	National Recovery Plan for the Regent Honeyeater (*Anthochaera phrygia*)	• Critically Endangered	No explicit relevant objectives	NA	NA
	Conservation Advice *Anthochaera phrygia* regent honeyeater		No explicit relevant objectives	NA	NA
Painted Honeyeater	Conservation Advice *Grantiella picta* (Painted honeyeater) (TSSC, 2015j)	• Vulnerable	No explicit relevant objectives	NA	NA
	National Recovery Plan for the Painted Honeyeater (*Grantiella picta*) (DAWE, 2021b)		No explicit relevant objectives	NA	NA
Malleefowl	National recovery plan for Malleefowl (*Leipoa ocellata*) (Benshmesh, 2007)	• Vulnerable	No explicit relevant objectives	NA	NA
South-eastern Hooded Robin	Conservation Advice for *Melanodryas cucullata cucullata* (hooded robin (south-eastern)) (DCCEEW, 2023j)	• Endangered	No explicit relevant objectives	NA	NA

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Plains-wanderer	Conservation Advice *Pedionomus torguatus* (plains-wanderer) (TSSC, 2015k)	• Critically Endangered	No explicit relevant objectives	NA	NA
	National Recovery Plan for the Plains-wanderer (*Pedionomus torquatus*) (CoA, 2016)		No explicit relevant objectives	NA	NA
Night Parrot	Conservation Advice Pezoporus occidentalis night parrot (TSSC, 2016d)	• Endangered	No explicit relevant objectives	NA	NA
Green Rosella (King Island)	Conservation Advice *Platycercus caledonicus* brownii green rosella (King Island) (TSSC, 2015l)	• Vulnerable	No explicit relevant objectives	NA	NA
Pilotbird	Conservation Advice for *Pycnoptilus floccosus* (Pilotbird) (DAWE, 2022b)	• Vulnerable	No explicit relevant objectives	NA	NA
Diamond Firetail	Conservation Advice for *Stagonopleura guttata* (diamond firetail) (DCCEEW, 2023k)	• Vulnerable	No explicit relevant objectives	NA	NA

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Black Currawong (King Island)	Conservation Advice *Strepera fuliginosa colei* (black currawong) (King Island) (TSSC, 2015l)	• Vulnerable	No explicit relevant objectives	NA	NA
Masked Owl (Tasmanian)	Conservation Advice for *Tyto novaehollandiae castanops* (Tasmanian Masked Owl) (DEWHA, 2010c)	• Vulnerable	No explicit relevant objectives	NA	NA
Marine Turtles					
All Marine Turtles • Loggerhead Turtles • Green Turtles • Leatherback Turtles	Recovery Plan for Marine Turtles in Australia, 2017 – 2027 (CoA, 2017a)	Endangered: • Loggerhead turtle • Leatherback turtle • Vulnerable: • Green turtle • Flatback turtle • Hawksbill turtle	Long-term recovery objective: Minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so that they can be removed from the EPBC Act threatened species list. Interim objective 3: • Anthropogenic threats are demonstrably minimised.	Chemical and Terrestrial Discharge	Minimise chemical and terrestrial discharge into marine turtle habitat.
				Marine debris	Reduce the impacts from marine debris: Support the implementation of the EPBC Act Threat Abatement Plan for the impacts of marine debris on vertebrate marine life.
				Noise interference	Assess and address anthropogenic noise: Understand the impacts of anthropogenic noise on marine turtle behaviour and biology.
				Light interference	Minimise light pollution: Artificial light within or adjacent to habitat critical to the survival of marine turtles will be managed such that marine turtles are not displaced from these habitats.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
				Vessel disturbance	Vessel interactions identified as a threat; no specific management actions in relation to vessels prescribed in the plan.
				Habitat modification	Manage anthropogenic activities to ensure marine turtles are not displaced from identified habitat critical to the survival. Manage anthropogenic activities in Biologically Important Areas to ensure that biologically important behaviour can continue.
				Climate Change and variability	Adaptively manage turtle stocks to reduce risk and build resilience to climate change and variability: Continue to meet Australia's international commitments to address the causes of climate change. Identify, test and implement climate-based adaptation measures.
	National Light Pollution Guidelines for Wildlife		Lighting objectives will need to consider the regulatory requirements and Australian standards relevant to the activity, location and wildlife present. Objectives should be described in terms of specific locations and times for which artificial light is necessary. Consideration should be given to	Light pollution	Light pollution

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
			whether colour differentiation is required and if some areas should remain dark – either to contrast with lit areas or to avoid light spill. Where relevant, wildlife requirements should form part of the lighting objectives		
Leatherback Turtle	Approved Conservation Advice for *Dermochelys coriacea* (Leatherback Turtle) (DEWHA, 2008a)	• Endangered • Migratory • Marine	No explicit relevant objectives	Boat strike	No explicit relevant management actions; vessel strikes identified as a threat.
				Habitat degradation (changes to breeding sites and degradation to foraging areas)	Identify and protect migratory corridors between nesting beaches and common foraging areas to facilitate colonization.
				Marine debris	No explicit relevant management actions; marine debris identified as a threat.
Cetaceans					
Sei Whale	Approved Conservation Advice for *Balaenoptera borealis* (Sei Whale) (TSSC, 2015a)	• Vulnerable • Migratory	Determine population abundance, trends and population structure for sei whales, and establish a long-term monitoring program in Australian waters.	Vessel disturbance	Minimising vessel collisions: Develop a national vessel strike strategy that investigates the risk of vessel strikes on sei whales and also identifies potential mitigation measures. Ensure all vessel strike incidents are reported in the National Vessel Strike Database.
				Noise interference	Once the spatial and temporal distribution (including biologically important areas) of sei

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
					whales is further defined, assess the impacts of increasing anthropogenic noise (including seismic surveys, port expansion, and coastal development).
				Habitat degradation	No explicit relevant management actions; habitat degradation identified as a threat.
				Pollution (persistent toxic pollutants)	No explicit relevant management actions; pollution identified as a threat.
				Climate and Oceanographic Variability and Change	Understanding impacts of climate variability and change: Continue to meet Australia's international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica.
Fin Whale	Approved Conservation Advice for *Balaenoptera physalus* (Fin Whale) (TSSC, 2015b)	• Vulnerable • Migratory	Determine population abundance, trends and population structure for fin whales, and establish a long-term monitoring program in Australian waters.	Vessel disturbance	Develop a national vessel strike strategy that investigates the risk of vessel strikes on fin whales and identifies potential mitigation measures. Ensure all vessel strike incidents are reported in the National Vessel Strike Database.
				Noise interference	Once the spatial and temporal distribution (including biologically important areas) of Fin Whales is further defined, assess the impacts of increasing anthropogenic noise (including seismic surveys, port expansion, and coastal development).

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
				Habitat degradation	No explicit relevant management actions; habitat degradation identified as a threat.
				Pollution (persistent toxic pollutants)	No explicit relevant management actions; pollution identified as a threat.
				Climate and Oceanographic Variability and Change	Understanding impacts of climate variability and change: Continue to meet Australia's international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica
Blue Whale	Conservation Management Plan for the Blue Whale, 2015-2025 (DoE, 2015b)	• Endangered • Migratory	The long-term recovery objective is to minimise anthropogenic threats to allow the conservation status of the blue whale to improve so that it can be removed from the threatened species list under the EPBC Act. Key terms of the Conservation Management Plan (CMP) and how they have been considered in this EP are provided in Appendix 3 Table 1-3.	Table 1-3Noise interference	Assess and address anthropogenic noise: shipping, industrial and seismic noise.
				Vessel disturbance	Minimise vessel collisions: Develop a national vessel strike strategy that investigates the risk of vessel strike on blue whales and also identifies potential mitigation measures. Ensure all vessel strike incidents are reported in the National Ship Strike Database. Ensure the risk of vessel strikes on blue whales is considered when assessing actions that increase vessel traffic in areas where blue whales occur and, if required, appropriate mitigation measures are implemented.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
				Habitat modification	No explicit relevant management actions; habitat modification identified as a threat.
				Climate Change	Understanding impacts of climate variability and change: Continue to meet Australia's international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica.
				Marine Debris	No explicit relevant management actions; marine debris identified as a threat.
Southern Right Whale	National Recovery Plan for the Southern Right Whale (*Eubalaena australis*) (DCCEEW, 2024b)	• Endangered • Migratory	Long term recovery objective: • The population has increased in size to a level that the conservation status has improved, and the species no longer qualifies for listing as threatened under any of the EPBC Act listing criteria. Interim Recovery Objective 2: • Anthropogenic threats are managed consistent with ecologically sustainable development principles to facilitate recovery of southern right whales. Target 2.1: • Robust and adaptive management principles are implemented to	Vessel interaction	Manage, minimise, and mitigate the threat of vessel strike: 1. Assess the risk of vessel strike to southern right whales in BIAs. 3. Ensure environmental impact assessments and associated plans consider and quantify the risk of vessel strike and associated potential cumulative risks in BIAs and habitat critical to the survival (HCTS) of the species. 5. Ensure all vessel strike incidents are reported in the National Ship Strike Database managed through the Australian Marine Mammal Centre, Australian Antarctic Division.
				Noise interference	Assess, manage, and mitigate impacts from anthropogenic noise:

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
			reduce anthropogenic threats to southern right whales in Australian waters and minimise the risk of mortality, injury, auditory impairment, or disturbance to biologically important behaviours from anthropogenic activities. Target 2.2: • Management decisions are supported by high quality information and scientific data, and high priority research areas identified in the Recovery Plan to deliver this information are supported through national and/or state funding programs and conservation planning.		• 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. • 3. Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that the risk of behavioural disturbance is minimised. • 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 • 5. Quantify risks of anthropogenic underwater noise to southern right whales
				Habitat modification	Address habitat degradation impacts from coastal and offshore marine infrastructure developments: • 1.Coastal and offshore development actions are assessed according to

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
					principles of ecological sustainable development to ensure the risk of injury, auditory impairment and/or disturbance to southern right whales is minimised. • 2. Baseline surveys and monitoring undertaken during activity implementation are conducted in accordance with best practice standards and guidelines to ensure standardised datasets are obtained and suitable to inform environmental management decision making that can reduce the risk of threats to southern right whales. • 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.
				Entanglement (marine debris)	No explicit relevant management actions; entanglement identified as a threat.
				Pollution	No explicit relevant management actions; pollution identified as a threat.
				Cumulative effects from threats	No explicit relevant management actions; cumulative effects identified as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
				Climate Change	Understand impacts of climate variability and anthropogenic climate change on the species biology and population recovery: 1. Continue to meet Australia's international commitments to address causes of climate change, including greenhouse gas emissions.
Pinnipeds					
Australian Sea Lion	Conservation Advice for the *Neophoca cinerea* (Australian sea lion) (TSSC, 2020c)	• Endangered • Marine	Primary conservation actions: Mitigate the impacts of marine debris on Australian sea lions	Noise interference	Monitor and mitigate impacts (including cumulative impacts) of human interactions on Australian sea lion colonies. Control access to breeding colonies to minimise the impacts of disturbance on Australian sea lions.
				Marine debris	Assess the impacts of marine debris on Australian sea lion populations and identify the sources of marine debris which have an impact. Develop and implement measures to mitigate the impacts of marine debris on the species (including reducing the amount of these marine debris entering the oceans), noting linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
				Disease and parasites	Improve human wastewater management to minimise dispersal of bacteria, parasites and pollutants into the marine environment.
				Habitat degradation and pollution (oil spills)	Require all vessels to have oil spill mitigation measures in place and implement jurisdictional oil spill response strategies as required.
				Climate Change	Review and adjust management measures to address the threats from disease/parasites and prey depletion, if it is demonstrated that increased temperatures compound these threats.
	Recovery Plan for the Australian Sea Lion (*Neophoca cinerea*) (CoA, 2013)		The overarching objective of this recovery plan is to halt the decline and assist the recovery of the Australian sea lion throughout its range in Australian waters by increasing the total population size while maintaining the number and distribution of breeding colonies with a view to: • Improving the population status leading to the future removal of the Australian sea lion from the threatened species list of the EPBC Act	Vessel strike	Collect data on direct killings and confirmed vessel strikes.
				Marine debris	Identify the sources of marine debris having an impact on Australian sea lion populations. Assess the impacts of marine debris on Australian sea lion populations. Develop and implement measures to mitigate the impacts of marine debris on Australian sea lion populations, noting the linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.
				Pollution and oil spills	Implement jurisdictional oil spill response strategies as required.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
			• Ensuring that anthropogenic activities do not hinder recovery in the near future or impact on the conservation status of the species in the future.	Habitat degradation	No explicit management actions; habitat degradation recognised as a threat.
				Disease	No explicit management actions; disease and pathogens recognised as a threat.
				Climate Change	No explicit management actions; climate change recognised as a threat.
Southern Elephant Seal	Conservation Advice *Mirounga leonina* southern elephant seal (TSSC, 2016e)	• Vulnerable • Marine	Continue high levels of protection for the southern elephant seal in important breeding, foraging and haul-out sites. Assess the impacts of disturbance, pollution and associated risks of disease on the health status of southern elephant seals	Climate and oceanographic variability and change	Improve knowledge of climate and oceanographic variability, including El Niño events, that affect southern elephant seal foraging and reproductive success.
				Pollution (including marine debris)	Continue, and where necessary adapt, management actions to reduce disturbance and pollution/marine debris impacts on southern elephant seals and their important breeding, foraging and resting habitats.
	Sub-Antarctic Fur-seal and Southern Elephant Seal Recovery Plan (DEH, 2003)	• Vulnerable	To maintain existing levels of protection for the Sub-Antarctic Fur and Southern Elephant seals to enable population growth so that these species may be removed from the threatened species list under the EPBC Act, and to ensure that any future anthropogenic impacts are not limiting.	None identified	NA
Threatened Ecological Communities					
Giant Kelp Marine Forests of	Approved Conservation Advice for Giant Kelp Marine	• Endangered	No explicit relevant objectives	Invasive species	No explicit management actions; invasive species recognised as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
Southeast Australia	Forests of Southeast Australia (DSEWPaC, 2012b)			Climate Change	No explicit management actions; climate change recognised as a threat.
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Approved Conservation Advice for the Littoral Rainforest and Coastal Vine Thickets of Eastern Australia ecological community (DoE, 2015c)	• Critically Endangered	No explicit relevant objectives	None identified	NA
Subtropical and Temperate Coastal Saltmarsh	Conservation Advice for Subtropical and Temperate Coastal Saltmarsh (DSEWPaC, 2013c)	• Vulnerable	No explicit relevant objectives	Pollution (oil spills)	Identify Coastal Saltmarsh as important habitat in all oil spill contingency planning at national and State levels and monitor the application of protocols on the management of spills involving saltmarshes.
				Invasive Species	No explicit management actions; invasive species recognised as a threat.
				Climate Change	No explicit management actions; climate change recognised as a threat.
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria	Approved Conservation Advice (including Listing Advice) for the Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community (DoE, 2018a)	• Endangered	The conservation objective is to mitigate the risk of extinction of the Salt-wedge Estuaries ecological community, assist recovery and maintain its biodiversity and function.	Land use and associated decline in water quality	Apply recommended buffers around the ecological community and avoid activities that could cause significant change to hydrology or water quality.
				Invasive species	No relevant management actions; invasive species recognised as a threat.
				Extractive and recreational activities	No explicit management actions; Extractive and recreational activities recognised as a threat.

Species	Plan/ Advice	Protection under EPBC Act	Relevant objectives	Threats identified relevant to the activity	Relevant conservation actions
				Climate Change	Enhance the resilience of the ecological community to the impacts of climate change by reducing other pressures.
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland	Conservation advice (incorporating listing advice) for the Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community (DoE, 2018b)	• Endangered	To mitigate the risk of extinction of Coastal Swamp Oak Forest, and help recover its biodiversity and function	Climate Change	No explicit management actions; climate change recognised as a threat.
Other relevant species					
Vertebrate Species	The Threat Abatement Plan for the impacts of Marine Debris on Vertebrate Wildlife of Australia's Coasts and Ocean (CoA, 2018)	N/A	There are four main objectives: • Contribute to the long-term prevention of the incidence of harmful marine debris • Remove existing harmful marine debris from the marine environment • Mitigate the impacts of harmful marine debris on marine species and ecological communities. • Monitor the quantities, origins and impacts of marine debris and assess the effectiveness of management arrangements over time for the strategic reduction of debris.	Marine debris	No explicit management actions for non-fisheries related industries (note that management actions in the plan relate largely to management of fishing waste (for example 'ghost' gear), and State and Commonwealth management through regulation.

Table 1-3: Guidance on 'Key Terms' within the Blue Whale Conservation Management Plan (CMP) and How they are Applied within this EP (DAWE, 2021a)

Relevant Plan/Advice	Description
Recovery Plans	The CMP for the Blue Whale (DoE, 2015a) has been treated as a recovery plan (under the EPBC Act) throughout the EP.
Recovery Plan actions	Actions identified in the CMP for the Blue Whales (DoE, 2015a) have been considered in the assessment of impacts and determination of acceptability of potential impacts to blue whale, specifically in underwater sound emissions (Sections 6.5 and 6.6).
Biologically Important Areas (BIAs)	BIAs for blue whale, CMP for the Blue Whale (DoE, 2015a), are described in Section 4.4.2.
Legal requirement - Action A.2.3. from the Blue Whale CMP: "Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to utilise the area without injury and is not displaced from a foraging area". Further, the DAWE key terms state: 'The recovery plan requirement, Action A.2.3, applies in relation to BIAs. A whale could be displaced from a Foraging Area if impact mitigation is not implemented. This means that underwater anthropogenic noise should not: • Stop or prevent any blue whale from foraging. • Cause any blue whale to move on when foraging. • Stop or prevent any blue whale from entering a Foraging Area. It is considered that a whale is displaced from a Foraging Area if: • Foraging behaviour is disrupted, regardless of whether the whale can continue to forage elsewhere within that Foraging Area. Mitigation measures must be implemented	Action A.2.3 and the DAWE key terms (September 2021) have informed the assessment of acceptability of underwater sound emissions, described in Section 6.5 and 6.6. In the assessment of underwater sound emissions, Amplitude Energy has taken a conservative approach. This is presented through the application of conservative impact thresholds for potential disturbance and injury, the application of ALARP Decision Context B, and the adoption of additional control measures to achieve ALARP. Adaptive management approaches have been investigated and the selected measures adopted reflect a conservative approach; they are designed such that the risk of injury and displacement are reduced so that the foraging behaviour of any blue whale should not be impacted. Amplitude Energy has considered the seasonal presence of species in defining the schedule and limitations for this activity. The residual risks to the species are considered low (Section 6.5) to moderate (Section 6.6) and the duration of activities (which could cause disturbance) are limited. The level of risk reduction achieved by locking the activity into a specific activity window is therefore considered to be grossly disproportionate to the level of risk reduction achieved. Temporal restrictions are unlikely to be manageable; schedule flexibility is necessary to allow for external factors outside of Amplitude Energy's control. If temporal restrictions were to be applied consistently for the purpose of eliminating the risk of disturbance due to vessel noise within blue whale foraging areas, it would prevent the use of vessels for a range of offshore activities for large periods of the year across the entire south-eastern bioregion, with significant impacts to shipping, fishing, existing and transitional offshore projects.

Relevant Plan/Advice	Description
to reduce the risk of displacement occurring during operations where modelling indicates that behavioural disturbance within a Foraging Area may occur'.	
Definition of 'a foraging area'	The activity operational area is located within a foraging BIA. Blue whale foraging is considered throughout the assessment of potential impacts and risks to blue whales. Timeframes when blue whale foraging is more likely to occur has been defined based on contemporary literature.
Definition of 'displaced from a foraging area'	The definition of 'displacement from a foraging area' has been adopted throughout the assessment of underwater sound emissions (Section 6.5 and 6.6).
Definition of 'injury to Blue Whale'	Injury has been defined as permanent threshold shift (PTS) and temporary threshold shift (TTS) throughout the assessment of underwater sound emissions (Section 6.5 and 6.6).

1.3 Other Requirements

1.3.1 Commonwealth Legislation, Policies and Guidelines

In addition to the OPGGS and EPBC Acts there are additional Commonwealth legislation, policies and guidelines (Table 1-4) relevant to the Project.

Table 1-4: Other Requirements - Commonwealth Legislation, Policies and Guidelines

Legislation / Regulation / Guidelines	Scope	Application to Activity	Administering Authority
Aboriginal and Torres Strait Islander Heritage Protection Act 1984	The Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act) is Commonwealth legislation that can be used by Aboriginal and Torres Strait Islander people to make applications to protect places and objects from injury or desecration. The places or objects in question must be of particular significance in accordance with Aboriginal tradition. Areas or objects protected under this Act are included in the National Heritage List and Commonwealth Heritage List.	Areas or objects protected under this Act may be present within the operational area, and monitoring area as detailed in Section 4.4.4.	DCCEEW
Australian Ballast Water Management Requirements Version 8 (DAWE, 2020a)	The Australian Ballast Water Management Requirements set out the obligations on vessel operators with regards to the management of ballast water and ballast tank sediment when operating within Australian seas.	Provides requirements on how vessel operators should manage ballast water during the Project to comply with the Biosecurity Act.	Department of Agriculture, Fisheries and Forestry (DAFF)
Australian Biofouling Management Requirements (DAFF, 2023)	The Australian biofouling management requirements set out obligations of operators of international commercial vessels for the management of biofouling when operating vessels under biosecurity control within Australian territorial seas.	Provides requirements on how operators of international commercial vessels should manage biofouling when operating during the Project to comply with the Biosecurity Act.	DAFF
Air Navigation Act 1920	This Act is responsible for managing navigation within the avian environment.	Helicopter and other aircraft activities occurring throughout all phases of the Project are required to abide to the requirements of this Act.	Department of Infrastructure, Transport, Regional Development and Communications (DITRDC)
Australian Heritage Council Act 2003	This Act was formed to establish the Australian Heritage Council	The Act applies to any activities, such as the Project,	DCCEEW

Legislation / Regulation / Guidelines	Scope	Application to Activity	Administering Authority
	and associated functions. The act also classifies areas that have heritage value, including those identified on the Commonwealth Heritage List, World Heritage List and National Heritage List.	that may impact on the heritage values of National or Commonwealth listed properties.	
Australian Maritime Safety Authority Act 1990	The main objects of this Act are: • To promote maritime safety. • To protect the marine environment from: – pollution from ships – other environmental damage caused by shipping. • To provide for a national search and rescue service. • To promote the efficient provision of services by the Authority. In Commonwealth waters AMSA is the Statutory Agency for vessels and must be notified of all incidents involving a vessel. In Commonwealth waters AMSA is the Control Agency for all ship-sourced marine pollution incidents and will respond in accordance with the National Plan for Maritime Environmental Emergencies. Under the National Plan AMSA may support oil spill response for non-ship sourced pollution incidents on the formal request of the respective incident controller.	The Act is applicable to all incidents that may occur within Commonwealth waters during the Project which require AMSA to lead or support the response to pollution in the marine environment.	Australia Maritime Safety Authority (AMSA)
Australian Radiation Protection and Nuclear Safety Act 1998	This Act aims to protect the health and safety of people and the environment from radiation effects.	The use of radioactive material (e.g. during formation evaluation) must comply with the Act.	Department of Health and Aged Care (DoHAC)
Biosecurity Act 2015 (& Regulations 2016)	The objects of this Act are: (a) to provide for managing the following: (i) biosecurity risks (ii) the risk of contagion of a listed human disease (iii) the risk of listed human diseases entering Australian territory or a part of Australian	The Biosecurity Act and regulations apply to 'Australian territory' which is the airspace over and the coastal seas out to 12 nm from the coastline. Provides regulations for the vessels used during the Project regarding ballast water and	DAFF

Legislation / Regulation / Guidelines	Scope	Application to Activity	Administering Authority
	territory, or emerging, establishing themselves or spreading in Australian territory or a part of Australian territory (iv) risks related to ballast water. (v) biosecurity emergencies and human biosecurity emergencies (b) to give effect to Australia's international rights and obligations, including under the International Health Regulations, the Sanitary and Phytosanitary Agreement and the Biodiversity Convention.	biofouling within Australian waters.	
Climate Change Act 2022 (Cwth)	This Act sets out Australia's greenhouse gas emissions reduction targets. As the Nationally Determined Contributions (NDC) are at the heart of the Paris Agreement, NDCs embody efforts by each country to reduce national emissions and adapt to the impacts of climate change.	Activities within this EP will be conducted in a manner consistent with Australia's GHG emission reduction targets.	DCCEEW
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (and Regulations 2000)	The Act aims to: • Protect MNES. • Provides for Commonwealth environmental assessment and approval processes. • Provides an integrated system for biodiversity conservation and management of protected areas. MNES includes: • World heritage properties • Places on the National Heritage List • Places on the Commonwealth Heritage List • Ramsar wetlands • Listed threatened species and communities • Migratory species under international agreements • Nuclear actions • Commonwealth marine environment	Petroleum activities are excluded from within the boundaries of a World Heritage Area (Sub regulation 10A(f). The activity is not within a World Heritage Area. The EP must describe matters protected under Part 3 of the EPBC Act and assess any impacts and risks to these. Section 3 of the EP describes matters protected under Part 3 of the EPBC Act. The EP must assess any actual or potential impacts or risks to MNES from the activity. Part 8 of the regulations establish caution zones and actions to avoid interfering with cetaceans.	DCCEEW

Legislation / Regulation / Guidelines	Scope	Application to Activity	Administering Authority
	• Great Barrier Reef Marine Park • Water trigger for coal seam gas and coal mining developments. For offshore petroleum activities, the assessment process is overseen by NOPSEMA as the delegated authority under the EPBC Act.		
Environment Protection (Sea Dumping) Act 1981	Aims to prevent the deliberate disposal of wastes (loading, dumping, and incineration) at sea from vessels, aircraft, and platforms.	May be triggered in the event equipment remains on the seabed following decommissioning during the Project. This is not the base case for planning purposes.	DCCEEW
Fisheries Management Act 1991	This Act and associated regulations protect Australia's fishery resources and establish responsibilities in ecologically sustainable development.	Where activities overlap Commonwealth-managed fisheries.	AFMA DAFF
Industrial Chemicals (Notification and Assessment Act) 1989	This Act enforces restrictions on using particular chemicals that may have detrimental and harmful effects on health and the environment and creates a national register if chemicals used in the industry.	Where relevant, chemicals used during the Project will be considered under the requirements of this Act prior to use.	DoHAC
Industrial Chemicals Environmental Management (Register) Act 2021 (ICEMR Act)	The Act establishes the Industrial Chemicals Environmental Management Standard (IChEMS) to manage environmental risks from industrial chemicals, including the IChEMS Register which lists chemicals and assigns risk management measures.	Management measures identified under IChEMS may have implications for the import and use of particular chemicals and products for the petroleum activity (e.g. fire-fighting foams).	DCCEEW
National Greenhouse and Energy Reporting Act 2007 (NGER Act)	A national framework for reporting and disseminating company information about greenhouse gas emissions, energy production and energy consumption. It is administered by the Clean Energy Regulator.	Activities associated with the project will result in the generation of atmospheric emissions and greenhouse gases. Requirements of the Act must be adhered to including energy and greenhouse gas reporting.	The Clean Energy Regulator
Navigation Act 2012	Regulates international ship and seafarer safety, shipping aspects of protecting the marine environment and the actions of seafarers in Australian waters. It gives effect to the relevant international conventions	All ships involved in petroleum activities, such as the Project, in Australian waters are required to abide to the requirements under this Act. Several Marine Orders (MO) are enacted under this Act	AMSA

Legislation / Regulation / Guidelines	Scope	Application to Activity	Administering Authority
	(MARPOL 73/78, COLREGS 1972) relating to maritime issues to which Australia is a signatory. The Act also has subordinate legislation contained in Regulations and Marine Orders.	which relate to offshore petroleum activities, including: • MO 21: Safety and emergency arrangements • MO 30: Prevention of collisions • MO 31: SOLAS and non-SOLAS certification.	
Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act 2006 Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations (OPGGS(E)R 2023	The Act addresses all licensing, health, safety, environmental and royalty issues for offshore petroleum exploration and development operations extending beyond the three-nautical mile limit. Part 4 of the OPGGS(E) regulations specify that an EP must be prepared for any petroleum activity and that activities are undertaken in an ecologically sustainable manner and in accordance with an accepted EP.	The OPGGS Act provides the regulatory framework for all offshore petroleum exploration and production activities in Commonwealth waters, such as the Project, to ensure that these activities are carried out: Consistent with the principles of ecologically sustainable development as set out in section 3A of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). So that environmental impacts and risks of the activity are reduced to ALARP. So that environmental impacts and risks of the activity are of an acceptable level.	NOPSEMA
Protection of the Sea (Prevention of Pollution from Ships) Act 1983 *Protection of the Sea (Prevention of Pollution from Ships) (Orders) Regulations 1994*	The Act aims to protect the marine environment from pollution by oil and other harmful substances discharged from ships in Australian waters. It also invokes certain requirements of the MARPOL Convention such as those relating to discharge of noxious liquid substances, sewage, garbage and air pollution. Requires ships greater than 400 gross tonnes to have pollution emergency plans in place and provides for emergency discharges from ships.	All ships involved in the Project are required to abide to the requirements under this Act. Several MOs are enacted under this Act relating to offshore petroleum activities, including: • MO Part 91: Marine Pollution Prevention – Oil • MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances • MO Part 94: Marine Pollution Prevention – Packaged Harmful Substances in Packaged Forms	AMSA

Legislation / Regulation / Guidelines	Scope	Application to Activity	Administering Authority
		• MO Part 95: Marine Pollution Prevention – Garbage • MO Part 96: Marine Pollution Prevention – Sewage • MO Part 97: Marine Pollution Prevention – Air Pollution • MO Part 98: Marine Pollution Prevention – Anti-fouling Systems.	
Protection of the Sea (Harmful Antifouling Systems) Act 2006	The Act aims to protect the marine environment from the effects of harmful anti-fouling systems. Under this Act, it is an offence to engage in negligent conduct that results in a harmful anti-fouling compound being applied to a ship. This Act also requires that Australian ships must hold 'anti-fouling certificates', provided they meet certain criteria.	All ships involved in the Project are required to abide to the requirements under this Act. The Marine Order MO 98: Marine Pollution Prevention – Anti-fouling Systems is enacted under this Act.	AMSA
Underwater Cultural Heritage Act 2018	Protects the heritage values of shipwrecks, sunken aircraft and other underwater cultural heritage (older than 75 years) below the low water mark.	Anyone who finds the remains of a ship, sunken aircraft or other underwater cultural heritage article needs to notify the relevant authorities, as soon as possible but ideally no later than after one week, and to give them information about what has been found and its location.	DCCEEW

1.3.2 State Legislation

There are no planned activities in state waters. However, the activities in commonwealth waters carry a risk of a loss of hydrocarbon inventory during well construction or from a release from vessel fuel tanks. In the unlikely event of an incident of this nature occurring, there is the potential for the spill to impact on state waters and/or shorelines. Relevant state legislation is listed below.

Legislation/Regulation	Scope	Application to Activity
Victoria		
Aboriginal Heritage Act 2006 (& Regulations 2018)	The primarily purpose of the Act is to provide for the protection of Aboriginal cultural heritage in Victoria.	There is the potential for First Nations cultural heritage, and Registered Aboriginal Parties (RAPs), to be located within or

Legislation/Regulation	Scope	Application to Activity
		associated with the operational area, and monitoring area. Section 4.4.4 identifies cultural receptors within the monitoring area.
Environment Protection Act 2017 (& various Regulations)	Controls discharges and emissions (air, water, noise) to the environment within Victoria. Provides for the maintenance and, where necessary, restoration of appropriate environmental quality and is relevant to oil pollution in Victorian state waters.	Planned and unplanned vessel discharges including spill response activities, during the activity are detailed in Section 6 and 7.
Emergency Management Act 2013	Provides for the establishment of governance arrangements for emergency management in Victoria. Provides for the emergency response structure for managing emergency incidents within Victorian State waters, triggered in the event of a spill impacting or potentially impacting State waters.	Emergency management structure would be triggered in the event that a hydrocarbon spill that extends into Victorian waters. Refer to OPEP.
Fisheries Act 1995 (& Regulations 2019)	Provides a legislative framework for the regulation, management and conservation of Victorian fisheries including aquatic habitats.	Commercial and recreational fishing activities within Victorian jurisdiction overlapped by the operational area and monitoring area are described in Section 4.4.3. Impacts and risks to commercial and recreational fishing are assessed in Section 6.
Flora and Fauna Guarantee Act 1988 (& Regulations 2020)	Purpose is to protect rare and threatened species; and enable and promote the conservation of Victoria's native flora and fauna. Where a species has been listed as threatened an Action statement is prepared setting out the actions that have or need to be taken to conserve and manage the species and community.	Triggered if an incident results in the injury or death of a FFG Act listed species (e.g. collision with a whale). Incident reporting requirements are detailed in Section 12.14.
Heritage Act 2017	Purpose is to provide for the protection and conservation of the cultural heritage of Victoria. The Act provides procedures to identify places of state heritage significance, and of historical archaeological value and establishes processes for obtaining approvals for changes to those places.	Possibly triggered in the event of impacts to a known or previously un-located shipwreck in Victorian State waters whilst undertaking emergency response activities. Incident reporting requirements are detailed in Section 11.14.
Marine (Drug, Alcohol and Pollution Control) Act 1988	Concerns the registration of vessels, pollution of the sea, and the safe and efficient operation of vessels on State waters. Outlines the Victorian Government response structure and contingency planning arrangements that	Applies to all vessel masters, owners, and crew that are operating vessels within Victorian State waters responding to a spill event.

Legislation/Regulation	Scope	Application to Activity
	must be implemented for marine pollution incidents that occur in Victorian waters.	
Marine Safety Act 2010 (& Regulations 2023)	Provides for safe marine operations in Victoria. Defines marine incidents and the reporting of such incidents to the Victorian Director of Transport Safety. Applies to vessel masters, owners, crew operating vessels in Victorian State waters.	Applies to all vessel masters, owners, and crew that are operating vessels in Victorian State waters under emergency response activities.
National Parks Act 1975 (& Regulations 2013)	Provide for the preservation and protection of the natural and cultural heritage values of parks, including marine national parks and coastal parks.	Victorian marine and coastal protected and sensitive areas in the monitoring area are described in Section 4.4.2. Reporting requirements in the event of a spill impacting or with the potential to impact State waters are detailed in the OPEP
Pollution of Waters by Oil and Noxious Substances Act 1986 (POWBONS) (& Regulations 2022)	Established to protect the sea and other waters from pollution by oil and noxious substances. Implements the MARPOL Convention (the International Convention for the Prevention of Pollution from Ships 1973) in Victorian State waters.	Triggered in the event of a hydrocarbon spill impacting or potentially impacting state waters. Reporting requirements in the event of a spill impacting or with the potential to impact State waters is detailed in the OPEP.
Traditional Owner Settlement Act 2010	The purposes of this Act are to advance reconciliation and promote good relations between the State and traditional owners and to recognise traditional owner groups based on their traditional and cultural associations to certain land in Victoria.	There is the potential for aboriginal heritage and RAPs within the monitoring area. Section 4.4.4 identifies cultural receptors within the monitoring area.
***Wildlife Act 1975* (& Regulations 2013)**	Promote the protection The Wildlife (Marine Mammal) Regulations 2019 prescribe minimum distances to whales and seals/seal colonies, restrictions on feeding/touching and restriction of noise within a caution zone of a marine mammal (dolphins (150 m), whales (300 m) and seals (50 m).	Applies where vessels are within Victorian State waters responding to a spill event. Prescribes minimum proximity distances to whales, dolphins and seals will be maintained. Triggered if an incident results in the injury or mortality of a whale, dolphin or seal. Incident reporting requirements are detailed in Section 12.4.

1.3.3 International Agreements

The United Nations Convention on the Law of the Sea 1982 (UNCLOS) is the principle international agreement which governs petroleum operations in Commonwealth waters. Additionally, Australia is a signatory to several international conventions with relevance to the development which are listed below.

Agreement/Convention	Scope	Application to Activity
International Convention for the Prevention of Pollution from ships, London, 1973/1978 (commonly known as MARPOL 73/78	Provides advice on the prevention and minimisation of accidental pollution and pollution that results from routine operations.	Guidance on the prevention of all potential and planned marine pollution associated with the EP. The *Protection of the Sea (Prevention of Pollution from Ships) Act 1983* and subsidiary Marine Orders give effect to MARPOL 73/78.
International Convention of Civil Liability for Oil Pollution Damage, 1969 and 1992 (CLC 69; CLC 92)	Ensures that in the case of oil pollution damage that results from maritime casualties involving oil-carrying ships that there is adequate compensation made for those affected.	Provides insight into the ship's liability in the case of a maritime casualty. The *Australian Maritime Safety Authority Act 1990* gives effect to this convention.
Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREGS)	Designed to create consistent guidelines for vessels operating in the sea and the responsibilities of their staff. Includes the risk of collision, a safe speed of travel and traffic separation schemes in areas of high traffic.	Provides instruction on the rules of operating vessels at sea in order to ensure safe travel. The *Navigation Act 2012* and subsidiary Marine Orders give effect to the regulations.
Convention for the Safety of Life at Sea 1974 (SOLAS)	This convention provides internationally agreed minimum standards for the construction, equipment and operation of vessels. It is implemented in Commonwealth law by the *Navigation Act 2012* and a series of Marine Orders made under this Act.	Provides requirements that all vessels operating within Australian waters must comply with. The *Australian Maritime Safety Authority Act 1990* gives effect to this convention.
Convention on the International Maritime Organisation 1948	Designed to promote efficient and sustainable shipping through international cooperation that focuses on safe, secure, environmentally sound practices.	Advice on how to travel overseas efficiently and sustainably in relation to navigation, maritime safety and marine pollution. The *Australian Maritime Safety Authority Act 1990* gives effect to this convention.
International Convention on Harmful Anti Fouling Systems 2001 (AFS Convention)	Designed to protect the marine environment from harmful anti-fouling systems used on ships by either prohibiting or restricting their use.	Guidance for evaluation of a vessels condition and the process of applying, maintaining, removing and disposing of anti-fouling coatings as required. The Protection of the *Sea (Harmful Anti-fouling Systems) Act 2006* and subsidiary Marine Order give effect to the Convention.

Agreement/Convention	Scope	Application to Activity
International Convention on the Control and Management of Ship's Ballast Water and Sediment (Ballast Water Management Convention)	Adopted with aims to prevent the international spread of non-native marine species by creating standards and procedures for the regulation and control of ships ballast water and sediments.	Guidance for ballast water management to reduce the risk of transfer of IMS. The *Biosecurity Act 2015* gives effect to the Convention.
International Maritime Organization (IMO) Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (Biofouling Guidelines)	Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species	Specific requirements that vessels have a biofouling management plan and a biofouling record book.
International Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1989 (Basel Convention)	Regulates the transboundary movements of hazardous waste to ensure that they are managed and disposed of in an environmentally safe manner. There is expectation that parties will also minimise the waste created and transported.	Provides instruction on the appropriate handling, export and disposal of hazardous waste. The *Hazardous Waste (Regulation of Exports and Imports) Act 1989* gives effect to the convention.
Kyoto Protocol 1997	Designed to have industrialised countries commit to implementing policies and measures that reduce and limit their greenhouse gas emissions. Australia met and exceeded its first period *Kyoto Protocol* target of 108 per cent of 1990 emissions levels by 2012, and is now replaced by the Paris Agreement 2016.	The Protocol has informed aspects of national greenhouse gas emissions management legislation, targets and policy within Australia since ratification in 2007.
Paris Agreement 2016 under the United Nations Framework Convention on Climate Change	Objective is to limit the global temperature rise to 2 degrees while attempting to limit it even further to 1.5 degrees in comparison to pre-industrial levels. Commits parties to establish and meet national emissions reduction targets to limit global temperature rise.	The Australian Government has and continues to develop legislation to implement the commitments made in the Paris Agreement. This legislation and associated policies influence how emissions are managed by industry, to within national targets. The *Climate Change Act 2022* (Cwth*)* gives effect to the Agreement.
United Nations Framework Convention on Climate Change 1992	Objective is to stabilise global greenhouse gas concentrations at a level that allows ecosystems to adapt naturally to a changing climate.	Established the framework by which countries agree and ratify actions to manage climate change, such as the Kyoto Protocol and Paris Agreement.
International Convention on the Conservation of Migratory Species of Wild Animals 1979 (Bonn Convention)	An environmental treaty that utilises international coordination in the advocacy of conservation and	Guidance on the conservation responsibilities regarding migratory species. The *EPBC Act* gives effect to the Bonn Convention through listing species

Agreement/Convention	Scope	Application to Activity
	sustainable use of migratory species, their habitats and migration routes.	as migratory under Part 3 of the Act.
Agreement on the Conservation of Albatrosses and Petrels (ACAP)	Multilateral agreement that coordinates international activities with a purpose to conserve albatross and petrel species and mitigate threats to these populations.	Advice on the conservation responsibilities regarding albatross and petrel species. The EPBC Act gives effect to ACAP by listing migratory albatross and petrel species conservation status under the EPBC Act.
China Australia Migratory Birds Agreement (CAMBA)	Bilateral agreement between China and Australia to provide protection and conservation of migratory birds that use the East Asian – Australasian Flyway and their important habitats.	Advice on the conservation responsibilities regarding bird species that may use the Project area as a migratory flyway between China and Australia. The *EPBC Act* gives effect to CAMBA by listing migratory birds recognised by the agreement as migratory under the *EPBC Act*.
Japan Australia Migratory Birds Agreement (JAMBA)	Bilateral agreement between Japan and Australia to provide protection and conservation of migratory birds that use the East Asian – Australasian Flyway and their important habitats.	Guidance on the conservation responsibilities regarding bird species that may use the Project area as a migratory flyway between Japan and Australia. The *EPBC Act* gives effect to JAMBA by listing migratory birds recognised by the agreement as migratory under the *EPBC Act*.
The Republic of Korea Migratory Birds Agreement (ROKAMBA).	Bilateral agreement between the Republic of Korea and Australia to provide protection and conservation of migratory birds that use the East Asian – Australasian Flyway and their important habitats.	Advice on the conservation responsibilities regarding bird species that may use Project area as a migratory flyway between the Republic of Korea and Australia. The *EPBC Act* gives effect to ROKAMBA by listing migratory birds recognised by the agreement as migratory under the *EPBC Act.*
The Minamata Convention on Mercury	The convention calls on signatories to protect human and environmental health from anthropogenic releases of mercury. The Convention came into force on in 2017 and was ratified in Australia in December 2021.	Australia is a signatory to the Convention. The Convention covers control and reduction of mercury in a range of processes and industries including gas exploration and production and is relevant to end-of-life aspects such as waste and materials management.
Convention Concerning the Protection of the World Cultural and Natural Heritage 1972	Designed to acknowledge and protect areas of cultural and natural heritage across the world.	Guidance around recognising protected areas and areas of cultural and natural heritage and mitigating any potential effects that a Project may have on them.

Agreement/Convention	Scope	Application to Activity
Intergovernmental Panel on Climate Change (IPCC) 6th Assessment Report	The IPCC released four reports relating climate change and anthropogenic influence and deducing the impact that climate change has had on ecosystems, biodiversity, humans, and cities. Convention on Climate Change.	Provides an international scientific up to date state of knowledge that relates climate change from human activities, and its observed and potential impacts.

Appendix 4 - Description of the Environment

Description of the Environment

Role	Name	Signature
Document Originator:	Environment Consultant	
Document Reviewer:	Principal Environment and Approvals Advisor	
Document Approver:	Environment & Sustainability Manager	

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Acronyms and Abbreviations

Acronym	Description
AAQ	Ambient Air Quality
ACMA	Australian Communications and Media Authority
AFMA	Australian Fisheries Management Authority
AHO	Australian Hydrographic office
ALA	Atlas of Living Australia
ALARP	As Low as Reasonably Practicable
AM	Australian Museum
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
AMSIS	Australian Marine Spatial Information System
APPEA	Australian Petroleum Production & Exploration Association
BAM	Basker Manifold
BHPP	BHP Petroleum International Pty Ltd
BIA	Biologically Important Area
BKO	Breeding Known to Occur
BLO	Breeding Likely to Occur
BMG	Basker-Manta-Gummy
BMO	Breeding May Occur
BP	British Petroleum
BSCZSF	Bass Strait Central Zone Scallop Fishery
CAES	Catch and Effort System
CAMBA	Agreement Between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment
CD	Conservation Dependent
CE	Critically Endangered
CEO	Chief Executive Officer
CFSR	Climate Forecast System Reanalysis
CGG	CGG Services (Australia) Pty Ltd
CHN	Casino, Netherby, Henry
CO	Carbon Monoxide
CSF	Coral Sea Fishery
CSMR	Coral Sea Marine Region
CTS	Commonwealth Trawl Sector
CZ	Central Zone
DAWE	Department of Agriculture, Water and the Environment
DCCEEW	Department of Climate Change, Energy, the Environment and Wate
DEE	Department of the Environment and Energy (previously Department of Sustainability, Environment, Water, Population & Communities (SEWPC), Department of Environment Heritage Water and the Arts (DEWHA), DEH and Environment Australia)
DEECA	Department of Energy, Environment and Climate Action
DEWHA	Department of Environment Heritage Water and the Arts

Acronym	Description
DNRET	Department of Natural Resources and Environment Tasmania
DPI	Department of Primary Industries
EAAF	East Asian - Australasian Flyway
ECDTS	East Coast Deepwater Trawl Sector
ECM	Estuarine, Coastal and Marine
EEZ	Exclusive Economic Zone
EHU	Electro-hydraulic Umbilical
EMBA	Environment that May Be Affected
EMP	Emergency Management Plan
ENE	East-northeast
EP	Environment Plan
EPA	Environmental Protection Authority
EPBC	Environment Protection and Biodiversity Conservation Act 1999
ESD	Ecologically Sustainable Development
ESF	Eastern Skipjack Fishery
ETBF	Eastern Tuna and Billfish Fishery
EZ	Eastern Zone
FKO	Foraging Known to Occur
FLO	Foraging Likely to Occur
FMO	Foraging May to Occur
FTE	Full-Time Equivalent
GAB	Great Australian Bight
GABTS	Great Australian Bight Trawl Sector
GBR	Great Barrier Reef
GHTS	Gillnet, Hook and Trap Sector
GL	Gigalitre
GLNG	Gladstone Liquefied Natural Gas
GMTOAC	Gunditj Mirring Traditional Owners Aboriginal Corporation
GSP	Gross State Product
GVP	Gross Value Product
HAT	Highest Astronomical Tide
HMAS	Her Majesty's Australian Ship
HMS	His / Her Majesty's Ship
HMVS	Her Majesty's Victorian Ship
HSE	Health, Safety and Environment
IA	Vertical Seismic Profiling
ICOLL	Intermittently Closed and Open Lakes and Lagoons
ICOMOS	International Council on Monuments and Sites
ID	Internal Diameter

Acronym	Description
ILUA	Indigenous Land Use Agreements
IMCRA	Integrated Marine and Coastal Regionalisation of Australia
IMOS	Integrated Marine Observing System
IMR	Inspection Maintenance & Repair
IMS	Invasive Marine Species
IPA	Indigenous Protected Area
IUCN	International Union for Conservation of Nature
JAMBA	Agreement Between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment
KAVHA	Kingston and Arthurs Vale Historic Area
KEF	Key Ecological Feature
KO	Species Or Species Habitat Known to Occur Within Area
LNG	Liquefied Natural Gas
LO	Species Or Species Habitat Likely to Occur Within Area
MKO	Migration Known to Occur within Area
MNES	Matters of National Environmental Significance
MO	# Species of Species Habitat May Occur Within Area or Marine Orders
MODIS	Moderate Resolution Imaging Spectroradiometer
MrKO	Migration Route Known to Occur within Area
MrLO	Migration Route Likely to Occur within Area
MSS	Marine Seismic Survey
MV	Merchant Vessel
N2O	Nitrous Oxide
NIMPIS	National Introduced Marine Pest Information System
NISB	National Intertidal/Subtidal Benthic
NNTT	National Native Title Tribunal
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National offshore Petroleum Titles Administrator
NRE	Department of Natural Resources and Environment (Tas)
NSW	New South Wales
NZ	New Zealand
O_3	Ozone
OCS	Offshore Constitutional Settlement
OPGGS	Offshore Petroleum and Greenhouse Gas Storage (Act 2006)
OPP	Offshore Project Proposal
OSRA	Oil Spill Risk Analysis
OW	Offshore Wind
OWF	Offshore Wind Farm
PIRSA	Department of Primary Industries and Regions South Australia
PMST	EPBC Act Protected Matters Search Tool

Acronym	Description
PPBZ	Port Phillip Bay Zone
QLD	Queensland
QM	Queensland Museum
QPWS	Queensland Parks and Wildlife Service
QX	Queensland Unknown (Marteilia sydneyi)
RAP	Reconciliation Action Plan
RARB	Recognised Aboriginal Representative Body
RKO	Roosting Known to Occur within Area
RLO	Roosting Likely to Occur within Area
RMO	Roosting May Occur Within Area
RNTBC	Registered Native Title Body Corporate
ROKAMBA	Agreement Between the Government of Australia and the Government of the Republic of Korea on the Protection of Migratory Birds
ROTAP	Rare or Threatened Australian Plants
ROV	Remote Observation Vehicle
SA	South Australia
SBT	Southern Bluefin Tuna
SBTF	Southern Bluefin Tuna Fishery
SCDS	United Nations Fish Stocks Agreements
SCSQ	Southern and Eastern Scalefish and Shark Fishery - Trawl Squid Catch Fishery
SCTR	Southern and Eastern Scalefish and Shark Fishery - Trawl Sector trawl sub-sector
SE	South-East
SEA	Strategic Environmental Assessment
SEC	South Eastern Corner
SEMR	South-East Marine Region
SEPP	State Environmental Planning Policy
SESSF	Southern and Eastern Scalefish and Shark Fishery
SETFIA	South East Trawl Fishing Industry association
SFR	Statutory Fishing Rights
SGSHS	Shark Gillnet and Shark Hook Sector
SHS	Scalefish Hook Sector
SOTS	Star of the South Wind Farm
SPF	Small Pelagic Fishery
SRL	Southern Rock Lobster
SS	Steam Ship
SSCK	Southern and Eastern Scalefish and Shark Fishery - Scalefish Hook Fishery
SSJF	Southern Squid Jig Fishery
SSKK	Southern and Eastern Scalefish and Shark Fishery - Gillnet Hook and trap sector shark hook sub-sector
STF	Skipjack Tuna Fishery

Acronym	Description
SW	Southwest
SWV	South Western Victorian
TAC	Total Allowable Catch
TEC	Threatened Ecological Community
TEMR	Temperate East Marine Region
TP	Tasman-Pacific
TSSC	Threatened Species Scientific Committee
UNCLOS	United Nations Convention on the Law of the Sea 1982
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UXO	Unexploded ordnance
VFA	Victorian Fisheries Authority
VHR	The Victorian Heritage Register
VIC	Victoria
WA	Western Australia
WTBF	Western Tuna and Billfish Fishery
WZ	Western Zone

1.0 Introduction

1.1 Regulatory Context

The Regulation 5 of the Offshore Petroleum Greenhouse and Gas Storage (Environment) (OPGGS(E)) Regulations 2023 Commonwealth define 'environment' as the ecosystems and their constituent parts, natural and physical resources, qualities and characteristics of location, places and areas, the heritage value of places and includes the social, economic and cultural features of those matters. In accordance with Regulation 21(2) of the OPGGS(E) Regulations, this document describes the physical (Section 2.0), ecological (Section 3.0), conservation values and sensitivities (Section 4.0), and social (Section 5.0) components of the environment.

A greater level of detail is provided for those particular values and sensitivities as defined by Regulation 21(3) of the OPGGS(E) Regulations which states that particular relevant values and sensitivities may include any of the following:

a. The world heritage values of a declared World Heritage property.
b. The national heritage values of a National Heritage place.
c. The ecological character of a declared Ramsar wetland.
d. The presence of a listed threatened species or listed threatened ecological community.
e. The presence of a listed migratory species.
f. Any values and sensitivities that exist in, or in relation to, part or all of:
    i. a Commonwealth marine area; or
    ii. Commonwealth land.

With regards to 21(3)(d) and (e) more detail has been provided where threatened or migratory species have a spatially defined biologically important area (BIA), habitat critical to survival or identified biologically important behaviour such as breeding, foraging, resting or migration.

BIAs are areas and times used by protected marine species for carrying out critical life functions as listed above (Department of Climate Change, Energy, the Environment and Water (DCCEEW), 2024n). BIAs can be located anywhere within the Australian marine environment and may also be designated over terrestrial areas (i.e., turtle nesting beaches). BIAs are:

- Designed to inform decision making about actions which may impact protected species.
- Described in conservation plans for protected marine species including statutory recovery plans, wildlife conservation plans, and conservation advice documents (DCCEEW, 2024n).

It is important to note that BIAs do not represent the species full range and that areas without BIAs may still support biologically important behaviours (DCCEEW, 2024n).

BIAs within this document have been described and defined by using the downloadable DCCEEW BIA shapefile dataset (DCCEEW, 2024p). At the time of updating this Master Existing Environment (August 2025), Australian Marine Spatial Information System (AMSIS) had not released the updated BIA data for the recently updated BIAs. Therefore, Amplitude Energy acknowledges that there will be a disconnect between AMSIS, PMST reports and the EP content until AMSIS releases this data. Note: the AMSIS has provided the data for the updated BIAs for the southern right whale as per the recently released National Recovery Plan (DCCEEW, 2024l).

With regards to 21(3)(f) more detail has been provided for:

- Key Ecological Features (KEFs) as they are considered as conservation values under a Commonwealth Marine Area.
- Australian Marine Parks (AMPs) as they are enacted under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Important habitat for migratory species is defined within the Matters of National Environmental Significance Significant Impact Guidelines 1.1 (CoA, 2013) as:

- habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species, and/or
- habitat that is of critical importance to the species at particular life-cycle stages, and/or
- habitat utilised by a migratory species which is at the limit of the species range, and/or
- habitat within an area where the species is declining.

1.2 Environmental Sectors

Due to the extent of the area being described, smaller Environmental Sectors have been defined (Figure 1-1) based on geology (e.g. petroleum geology) and ecology (e.g. IMCRA regions; Figure 1-2); these sectors are used throughout this document (Table 1-1).

Amplitude Energy petroleum titles are located in the Otway and Gippsland Environmental Sectors, more detailed information is provided about receptors in each of these sectors, given the planned impacts that may occur associated with petroleum activities in these sectors.

Table 1-1: Bioregions and Geology of the Environmental Sectors

Sector	General Boundary	IMCRA Provincial Bioregions[1]	Petroleum Geology[2]
Otway	Cape Jaffa (South Australia) to Cape Otway (Victoria); west of King Island to Cape Grim (northwest Tasmania)	Western Bass Strait IMCRA Transition West Tasmania Transition Spencer Gulf Province Southern Province	Otway Basin
Bass Strait	Cape Otway to Woodside Beach (Victoria); northern Tasmanian coast; and includes King and Flinders Island (and associated island chains)	Western Bass Strait IMCRA Transition Bass Strait IMCRA Province Southeast IMCRA Transition	-
Gippsland	Woodside Beach (Victoria) to Batemans Bay (New South Wales); east of Flinders Island to Eddystone Point (north-east Tasmania)	Southeast IMCRA Transition Southeast Transition	Gippsland Basin
Sorell	Western coast of Tasmania, from Cape Grim to South East Cape	Tasmanian IMCRA Province Tasmania Province West Tasmania Transition	Sorell Basin
SE Tasmania	Eastern coast of Tasmania, from Eddystone Point to South East Cape	Tasmanian IMCRA Province Tasmania Province	-
Central NSW	Batemans Bay to Coffs Harbour (New South Wales)	Central Eastern IMCRA Province Central Eastern Province	Sydney Basin

Sector	General Boundary	IMCRA Provincial Bioregions[1]	Petroleum Geology[2]
SE Queensland	Coffs Harbour (New South Wales) to Gladstone (Queensland)	Central Eastern IMCRA Province Central Eastern Transition Kenn Transition Kenn Province Central Eastern Province	Capricorn Basin Clarence-Morton Basin Maryborough Basin Nambour Basin
Lord Howe	Lord Howe Island	Tasman Basin Province Lord Howe Province	Lord Howe Rise
Norfolk Island	Norfolk Island	Norfolk Island Province	-

[1] IMCRA regions as described by Commonwealth of Australia (2006)

[2] Petroleum geology as described by Geoscience Australia (2017)

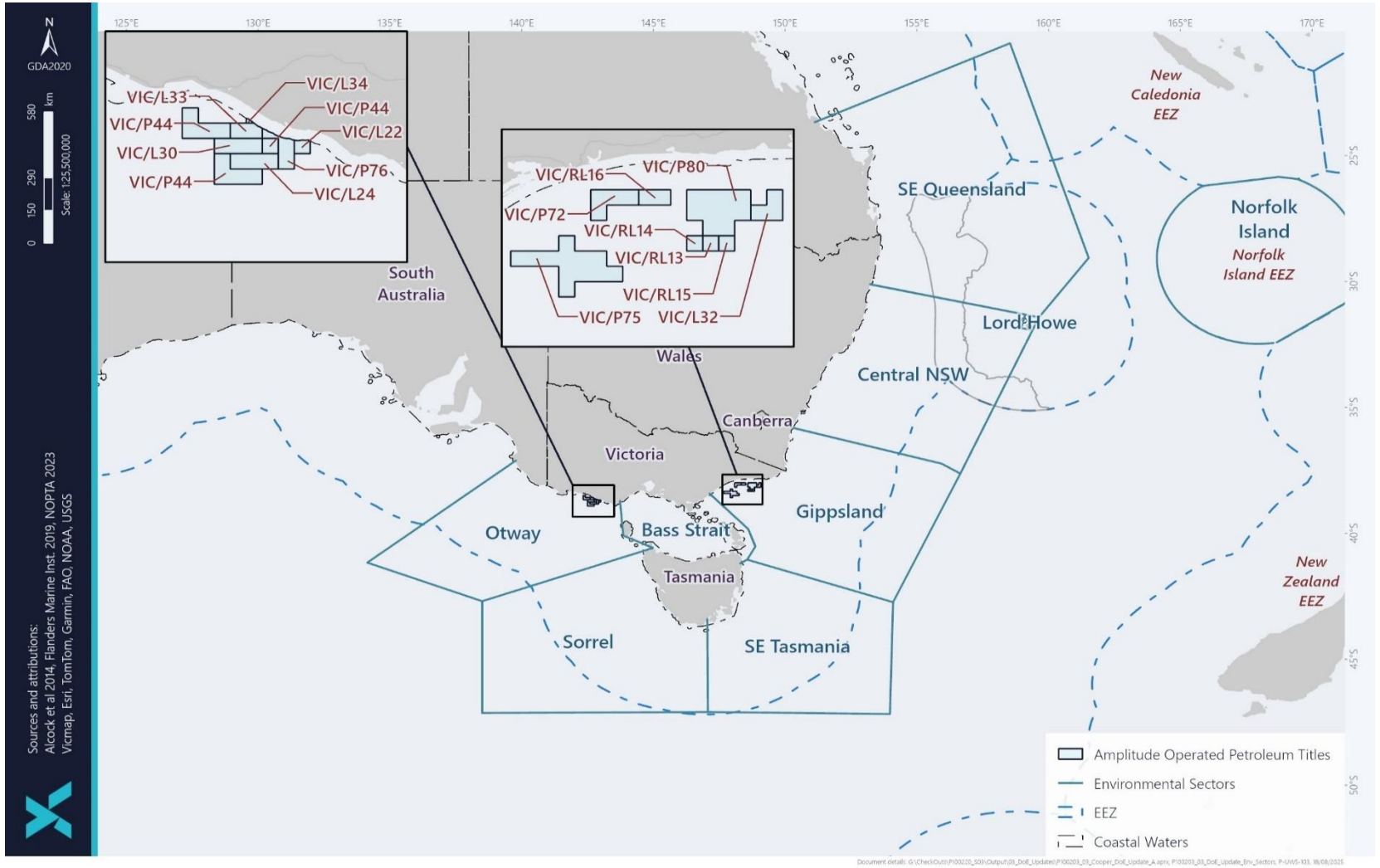

Figure 1-1: Environmental Sectors

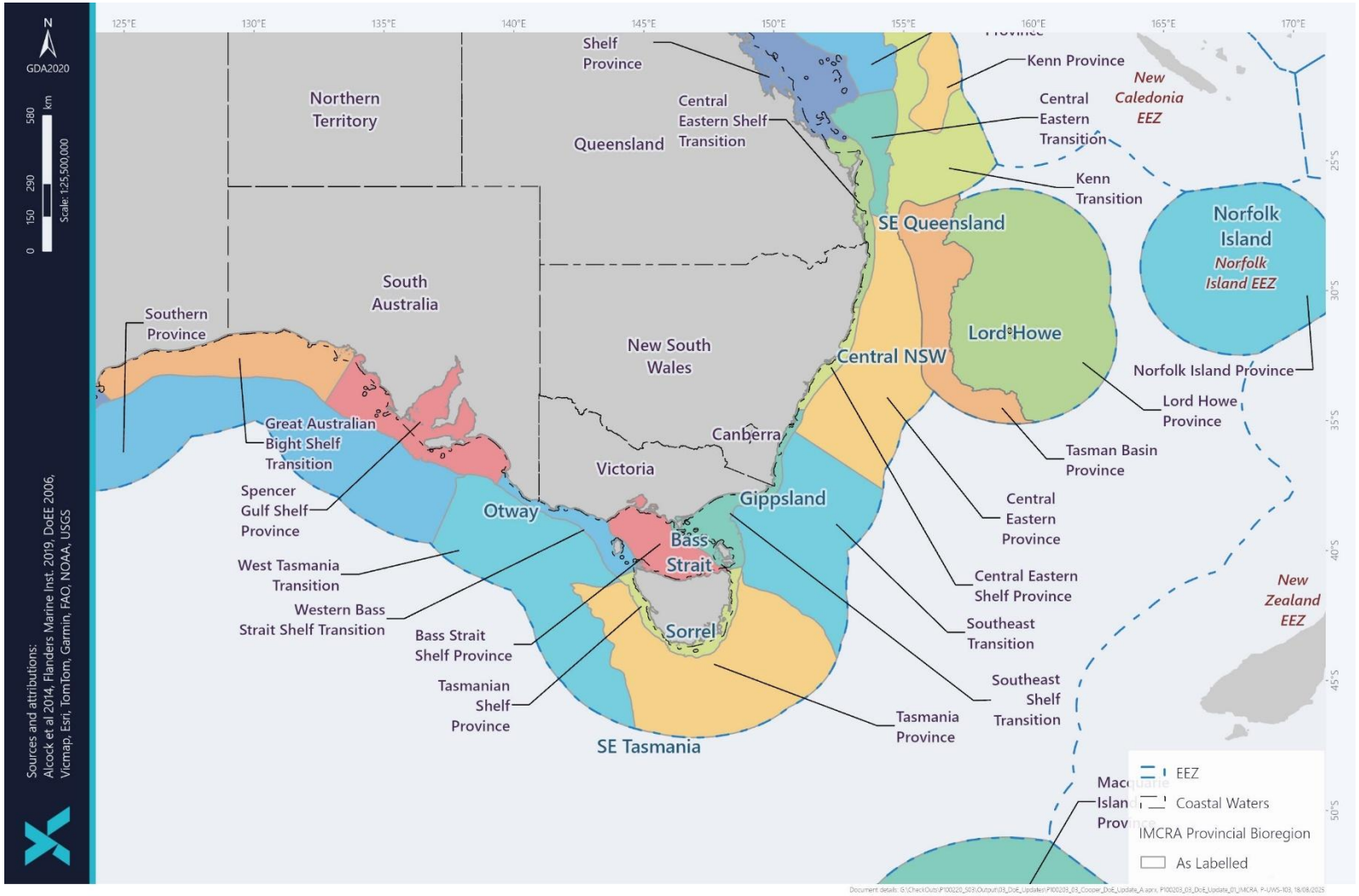

Figure 1-2: IMCRA Provincial Bioregions

1.3 Amplitude Facilities Context

This document serves as a comprehensive description of the environment to cover all offshore activities undertaken by Amplitude Energy. It describes the physical, ecological, conservation values and sensitivities, and social components found within the Environmental Sectors (*Figure 1-1*) which encompass all Amplitude Energy activities from the following key offshore regions:

- Otway Basin, which includes:
  - Activities carried out under the ***East Coast Supply Offshore Project Proposal (OPP)*** (Cooper Energy, 2025a).
  - Activities conducted as part of the ***Athena Supply Project Environment Plan (EP)*** (Cooper Energy 2025b).
  - Operation of the Casino, Netherby and Henry pipeline and associated wells conducted under the ***Offshore Otway Operations - Casino, Henry and Netherby Environment Plan*** (Cooper Energy, 2024b).
- Gippsland Basin, which includes:
  - Activities under the ***BMG Closure Project Phase 2 EP*** (Amplitude Energy, 2024a).
  - Ongoing activities under the ***Gippsland Offshore Operations EP*** (Cooper Energy, 2024c).

2.0 Physical Environment

2.1 Bathymetry and Seabed Features

The geomorphology of Australia's continental margin is varied, with a number of different geomorphic features present, including basins, canyons, terraces, seamounts and plateaus (Figure 2-1, Figure 2-2). In the south-east, the continental shelf is broad, extending offshore to approximately 200 m water depth; in contrast, the shelf along eastern Australia is narrower and shallower, varying between approximately 10 km and 75 km offshore, and between 70–165 m water depth (Harris et al., 2005). Some of the notable features on the continental shelf include the Otway Depression and Otway Shelf, King Island Rise, Bass Basin and Gippsland Shelf (Figure 2-1, Figure 2-2Geomorphic features on the continental slope and abyssal plain include: Bass Canyon, East Tasman Saddle and East Tasman Plateau, South Tasman Rise, Stradbroke Seamount and Moreton Seamount (Figure 2-1, Figure 2-2).

Bass Basin, a seaway separating the mainland and Tasmania, is a shallow depression approximately 120 km by 400 km, with water depths up to approximately 90 m (average water depth of approximately 60 m) (Figure 3-3). The basin is bounded on the eastern and western margin by two granite plateaus: the Bassian Rise, and King Island Rise. Within the Bass Basin, Bassian Rise (eastern margin) separates Bass Basin from the Gippsland Basin and is associated with the Furneaux Islands. King Island Rise (western margin) includes the shallow (<40 m water depth) Tail Bank, and King Island itself; and separates Bass Basin from Otway Basin. To the southwest, there is a relatively narrow, 60 m-deep channel between King Island and Tasmania. Sandwaves and tidal current ridges occur on the seabed of both Bassian and King Island Rises. The largest of the tidal sand ridges, Moriarty Bank, lies east of Clarke Island and is approximately 20 km long and 4 km wide, orientated east-west, sub-parallel to the flow of tidal currents (Harris et al., 2005). East of Bass Strait, on the continental slope and rise, are a number of submarine canyons; the largest of which is Bass Canyon. This submarine canyon is oriented east-southeast and is 10–15 km wide at its mouth, and approximately 60 km long (Harris et al., 2005). This canyon area is associated with two Key Ecological Features: Bass Cascade, and Big Horseshoe Canyon (see Section 4.6). Similarly, east of Tasmania and

east of King Island Rise, there are a series of canyons through the continental slope. At abyssal water depths, south of Tasmania, the seabed is characterised by gently undulating relief with irregular faulted basement blocks and seamounts.

The volcanic seamounts of the Tasmantid Seamount Chain occur on the abyssal plain east of Australia, including Moreton Seamount, Brisbane Guyot, Queensland Guyot, Stradbroke Seamount, Derwent-Hunter Guyot, Barcoo Bank and Taupo Bank. These seamounts vary in size, Stradbroke Seamount rises to 900 m water depth, while Barcoo Bank rises to less than 1,400 m water depth (Harris et al., 2005).

The seabed within the vicinity of the Gippsland sector tends to be slightly undulating (gradients <2°) and smooth. Noting however that the Basker-6 flowline (located between the BAM and Basker-6 wellhead) crosses the upper levels of the Bass Canyon scarp (decreasing from ~155–216 m water depth), and as a result has unique characteristics (Amplitude Energy, 2024).

There have been no seabed anomalies identified in the Gippsland Environmental Sector from geophysical surveys. The seabed at and around the (BMG) wells tend to be featureless with the seabed comprised of silty sand. The underlying geological structure tends to be dipping and slightly irregular, grading from silty fine sand at the seabed to over consolidated sandy silty clay at 10 m below seabed. The flowline route also crosses a narrow zone of what has been interpreted as variably cemented silty sand and gravel, which corresponds with the area of steepest gradient along the scarp edge (Amplitude Energy, 2024).

Basker-6 flowline route can be divided into three zones; above the Bass Canyon Scarp (~ 150 m); on the Bass Canyon Scarp (~150 m to ~220 m with maximum slope ~ 20°) and below the Bass Canyon Scarp (~ 220 m to 270 m) towards the Basker-6 well (Amplitude Energy, 2024; CTC Marine, 2011). Geotechnical survey conducted (CTC Marine, 2011), reported that the zone above the Bass Canyon Scarp tend to be flat and featureless, comprising silty fine sand with an increase in shell towards the scarp edge. While the seabed on Bass Canyon Scarp was “irregular in profile, consistent with erosion”, with sediments comprising of clayey silty sand with a high proportion of shell and other carbonate fragments and areas of cemented soil at the base of the slope. Seabed below Bass Canyon Scarp was reported to have a gently undulating topography formed by slump material from the scarp area.

More recent surveys conducted in 2020 confirmed that seabed surrounding subsea infrastructure tends to be dominated by a mix of sand and pebble/gravel (Ierodiaconou, 2021).

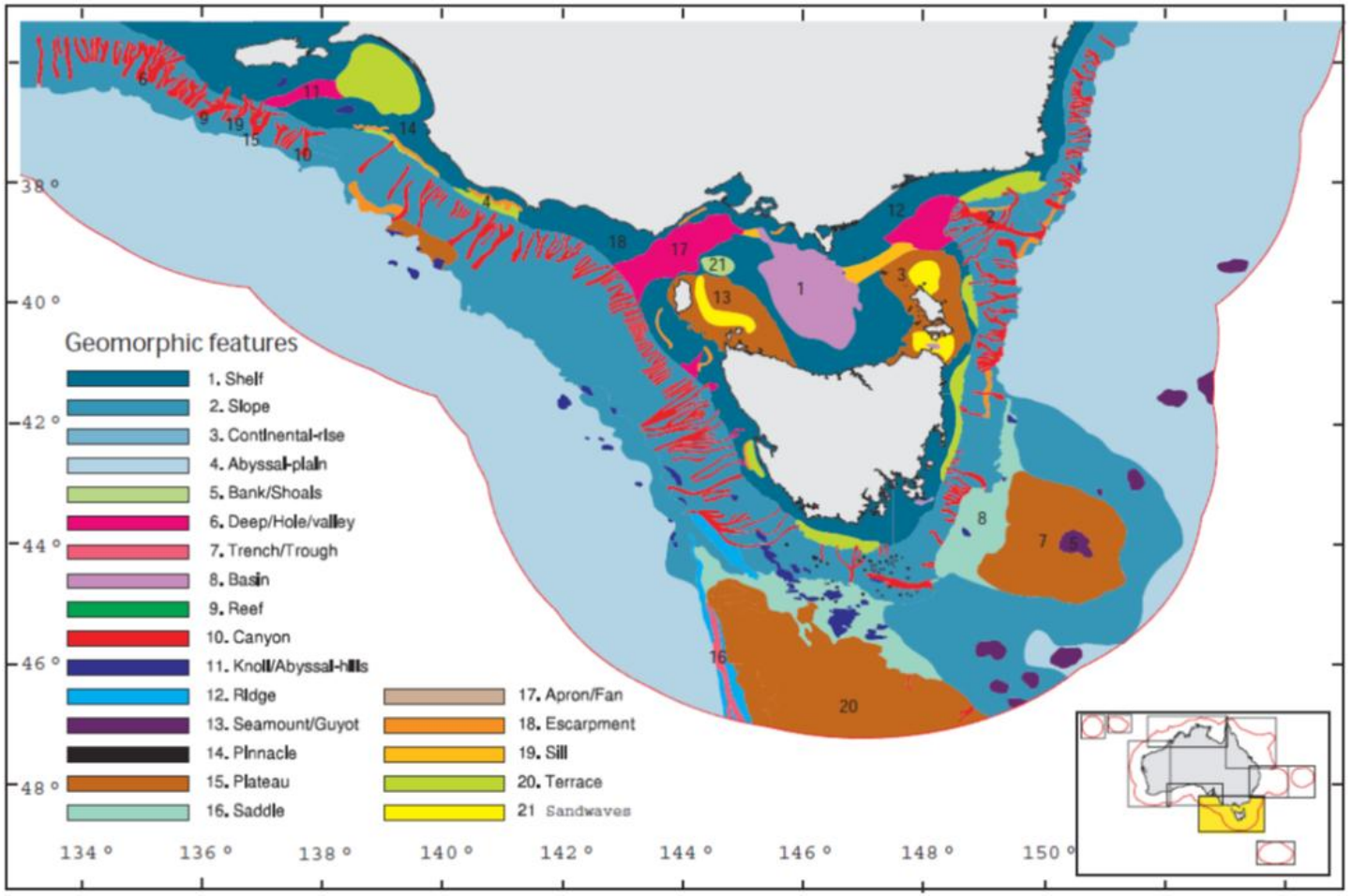

Figure 2-1: Geomorphic Features of the South-east Margin (Harris et al., 2005)

Notes: Features within the Environmental Sectors, as labelled on above figure – (1) Bass Basin, (2) Bass Canyon, (3) Bassian Rise, (4) Beachport Plateau, (5) Cascade Seamount, (7) East Tasman Plateau, (8) East Tasman Saddle, (10) Flinders Canyon, (12) Gippsland Shelf, (13) King Island Rise, (14) Lacepede Shelf, (16) Needwonne Ridge, (17) Otway Depression, (18) Otway Shelf, (20) South Tasman Rise, (21) South Tasman Saddle, (22) Tail Bank, (23) Toofee Ridge.

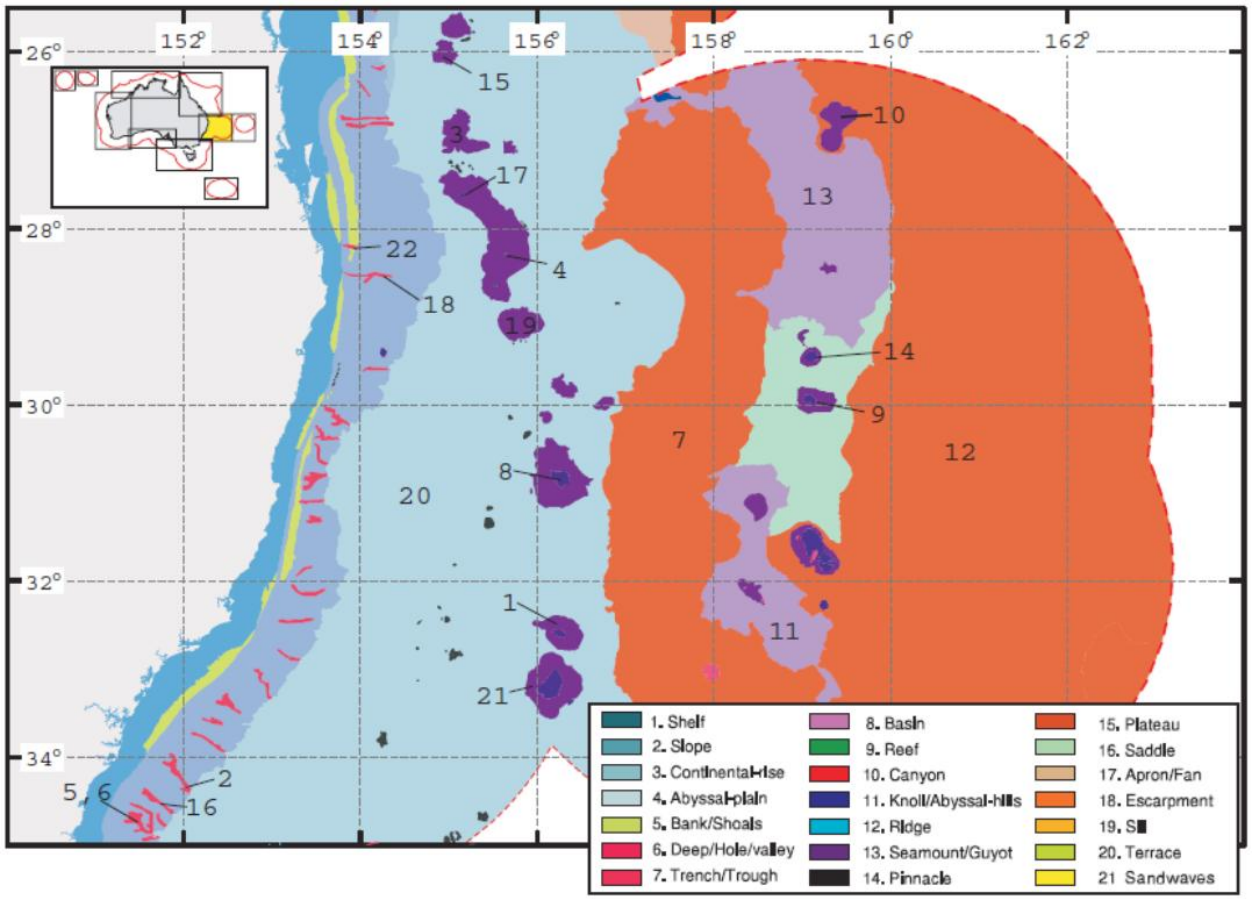

Figure 2-2: Geomorphic Features of the Eastern Margin (Harris et al., 2005)

Note: Features within the Environmental Sectors, as labelled on above figure – (1) Barcoo Bank, (2) Beecroft Canyon, (3) Brisbane Guyot, (4) Brittania Guyots, (5) Conjola Canyon A, (6) Conjola Canyon B, (7) Dampier Ridge, (8) Derwent-Hunter Guyot, (9) Elizabeth Reef, (10) Gifford Guyot, (11) Lord Howe Basin, (12) Lord Howe Rise, (13) Middleton Basin, (14) Middleton Reef, (15) Moreton Seamount, (16) Perpendicular Canyon, (17) Queensland Guyot, (18) Richmond Canyon, (19) Stradbroke Seamount, (20) Tasman Basin, (21) Taupo Bank, (22) Tweed Canyon.

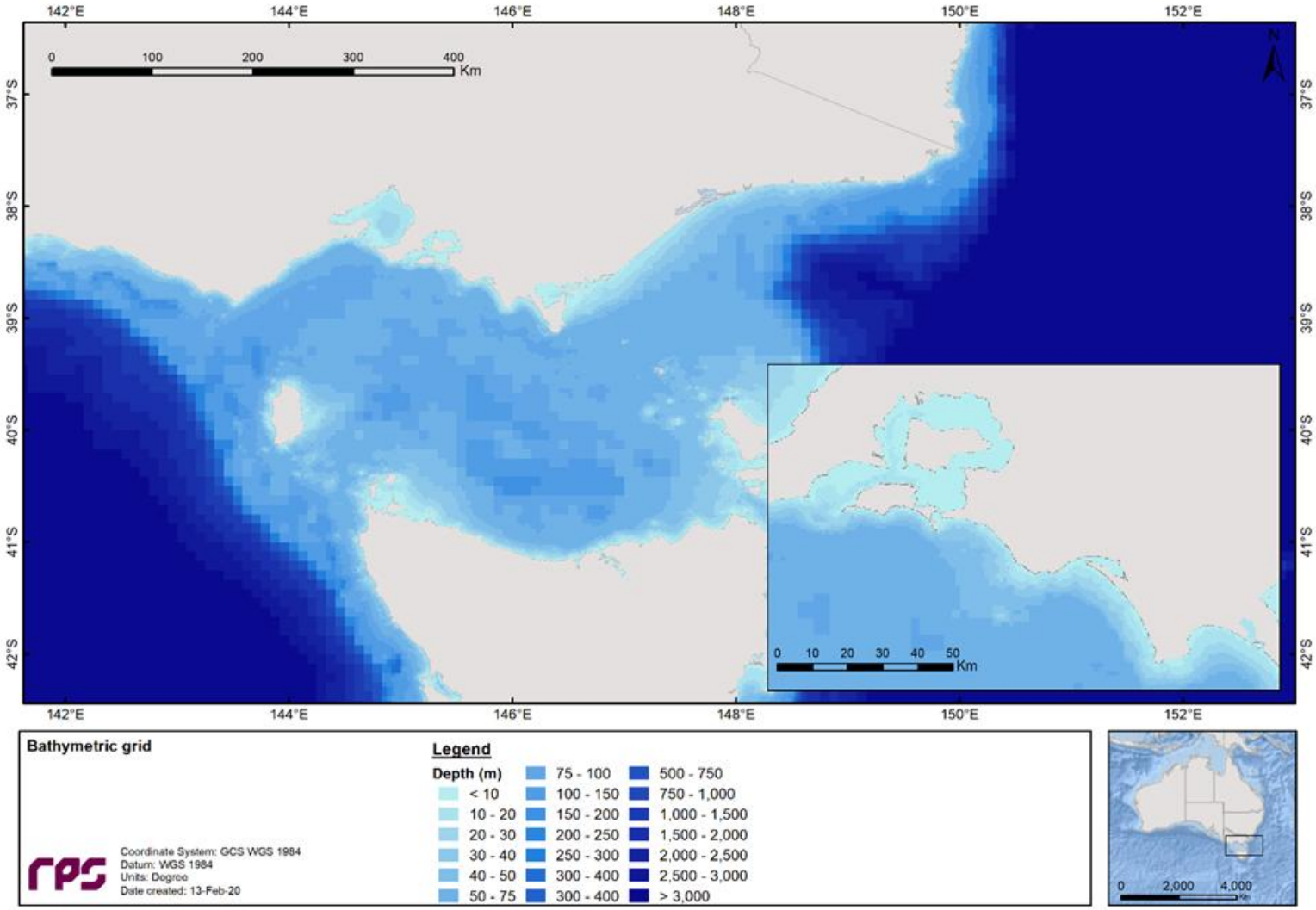

Figure 2-3: Bathymetry Defined throughout Bass Strait Region (RPS, 2024)

2.2 Oceanography

2.2.1 Currents

Australia is heavily influenced by four major currents: East Australian Current, Leeuwin Current, Indonesian Throughflow, and the Antarctic Circumpolar Current (Figure 2-4). These four currents have a driving influence on the conditions and biodiversity in Australian oceans and coastal environments. There are also a number of smaller and more complex current systems. All these ocean features can change from season to season, and may be more or less extensive and energetic, depending on climate factors.

The East Australian Current flows south along the east coast of Australia from near Queensland's Fraser Island to Tasmania; and is an important feature of the Tasman Sea. This area has been warming faster than other parts of the ocean (CSIRO, no date). This has been driven by changes in atmospheric circulation causing an increase in strength of the South Pacific Gyre, resulting in the strengthening of the East Australian Current, so that the warm tropical waters from the Coral Sea region are forced further south, warming the Tasman Sea (CSIRO, no date).

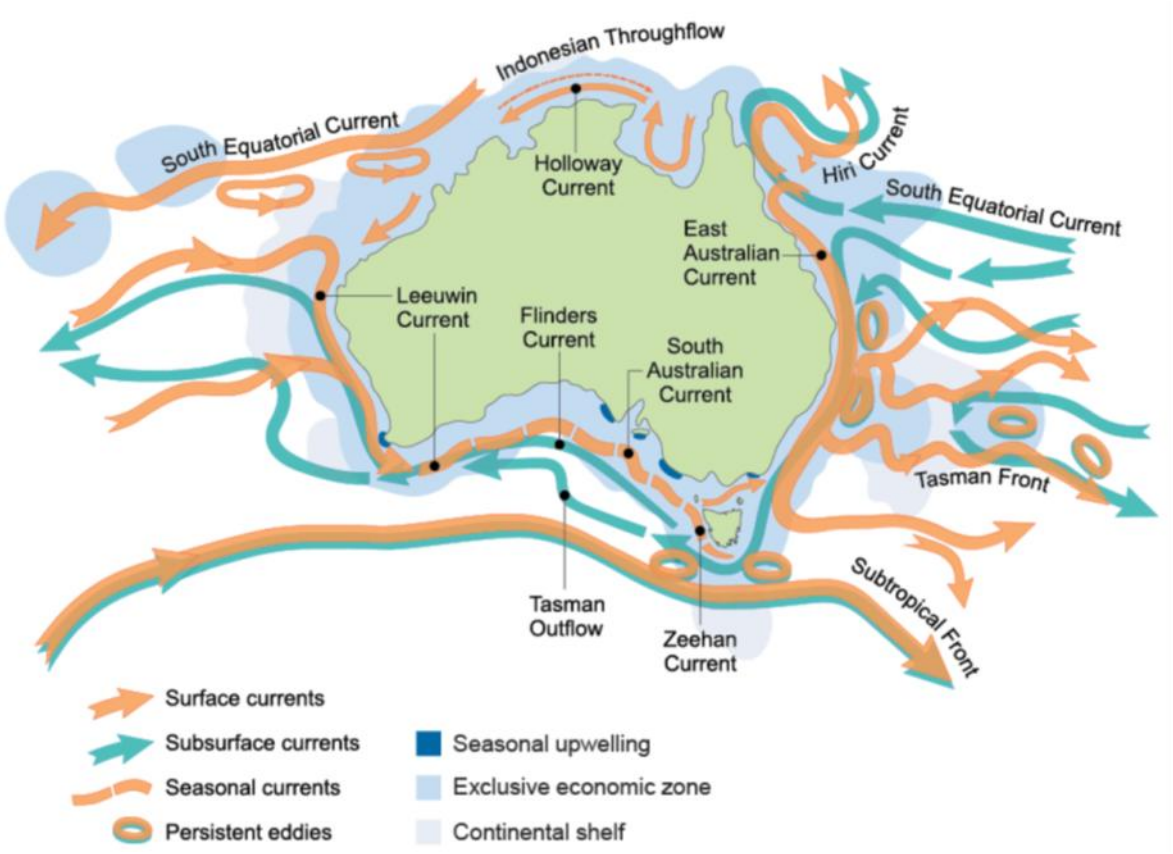

Figure 2-4: Major Ocean Currents and Features of Australia's Marine Environment (Source: CSIRO, no date)

The Bass Strait region has a reputation for high winds and strong tidal currents (Jones, 1980). Currents within the Strait are primarily driven by tides, winds and density driven flows. Tides are semi-diurnal with some diurnal inequalities, generating tidal movements with a predominantly north-east to south-west orientation; with speeds ranging 0.1–2.5 m/s (Fandry, 1983). Tidal flows in

Bass Strait come from the east and west during a rising (flood) tide, and flow out to the east and west during a falling (ebb) tide. During winter, the South Australian Current (fed by the Leeuwin Current in the Northwest Shelf), which bifurcates with one extension moving through the Bass Strait, and another forming the Zeehan Current off western Tasmania (Sandery and Kämpf, 2007). During summer, water flow reverses off Tasmania, King Island and the Otway Basin travelling eastward, as the coastal current develops due to south-easterly winds. In winter and spring, waters within the strait are well mixed with no obvious stratification, while during summer the central regions of the strait become stratified (RPS, 2024).

Bass Strait is a high-energy environment exposed to frequent storms and significant wave heights. The Otway coast has a predominantly south-westerly aspect and is highly exposed to swell from the Southern Ocean. Storms in Bass Strait can generate wave heights of 5 m or more (Cooper Energy, 2019). In-situ wave measurements in the northern portion of the Casino pipeline, showed 2.0–3.5 m waves occur for 50% of the time, and waves over 7.6 m can occur during winter (Santos, 2004).

Within the Gippsland region, surface currents generally flow in a northeast to southwest axis with different intensities depending on the month. The average current speed ranged between 0.18 m/s and 0.24 m/s while maximum current speeds ranged between 0.59 m/s (December) and 0.96 m/s (March) (RPS, 2021).

Within the Otway region, surface currents vary depending on the month, however, typically flow east-southeast during the winter months. The average current speed ranged between 0.15 m/s and 0.24 m/s while maximum current speeds ranged between 0.68 m/s (January) and 1.07 m/s (July) (RPS, 2024).

The Key Ecological Feature (KEF) known as the Bass Cascade is present during winter, when down-welling is caused by the cooling of shallow waters of Bass Strait into Gippsland Basin. Down-welling currents that originate in the shallow eastern waters of Bass Strait flow down the continental slope to depths of several hundred metres or more into the Tasman Sea.

2.2.2 Sea Temperature and Salinity

Sea-surface temperatures vary seasonally from ~13.3°C (Sept) to ~18.6°C (Jan/Feb/Mar) within the Otway region (RPS, 2024).

Typically, seawater temperature decreases with depth, particularly in the summer months, while during the winter months the shallower continental shelf waters of the Otway Basin become well mixed due to the strong winds and high waves which results in a small temperature variation between the surface and seabed (RPS, 2023).

Waters of eastern Bass Strait are generally well mixed, but surface warming sometimes cause weak stratification in calm summer conditions. During these times mixing and interaction between varying water masses leads to variations in horizontal water temperature and a thermocline (temperature profile) develops. The thermocline acts as a low-friction layer separating the wind-driven motions of the upper well-mixed layer of Bass Strait from the bottom well-mixed layer (Esso, 2009).

The southwest region of Victorian area has significant upwelling of colder, nutrient rich deep-water during summer (i.e., the Bonney Coast Upwelling KEF) that can cause sea surface temperatures to decrease by 3°C compared with offshore waters (Butler et al., 2002).

2.3 Air Quality and Climate

Australia's size and geography gives rise to a diverse range of climate patterns across the continent and offshore islands. The south-eastern coast (Victoria, Tasmania, New South Wales) is primarily described as being 'temperate'; and the region extending into southern Queensland becomes 'subtropical'. There are seasonal variations in mean temperatures and rainfall, with northern Australia (including Queensland), having higher summer rainfall, compared to southern Australia when winter rainfall is more dominant (Figure 2-5, Figure 2-6).

Victorian's climate can be characterised as cool temperate, with cool wet winters and cool summers. The conditions are primarily influenced by weather patterns originating in the Southern Ocean. It is dominated by sub-tropical high-pressure systems in summer and sub-polar low-pressure systems in winter. The low-pressure systems are accompanied by strong westerly winds and rain-bearing cold fronts that move from west to east across the region.

Bass Strait is located on the northern edge of the westerly wind belt known as the Roaring Forties. Hindcast modelled wind data from the National Centres for Environmental Predictions Climate Forecast System Reanalysis for the period 2008 to 2012 (inclusive), showed winds were typically from a westerly (west-southwest to west-northwest) direction, with average monthly wind speeds ranging from 14.1–16.5 knots.

The modelling results shown in Figure 2-7 demonstrate that the Otway Basin typically experience moderate winds all year round, with average wind speeds recorded to ranging from 14 knots during summer to 19 knots during winter months. Maximum monthly speeds ranged between 39 knots (January) up to 53 knots (June). The dominant wind direction varies throughout the year, though westerly winds tend to dominate during September to November (RPS, 2024).

In comparison, the dataset shown in Figure 2-8 demonstrates that the Gippsland Basin typically experiences moderate to strong winds all year round and although the monthly average wind speeds remain under 10 knots, winds can at times blow over 25 knots. Winds in the region typically blow from the southwest during the summer months and west-southwest during the winter months (RPS, 2021).

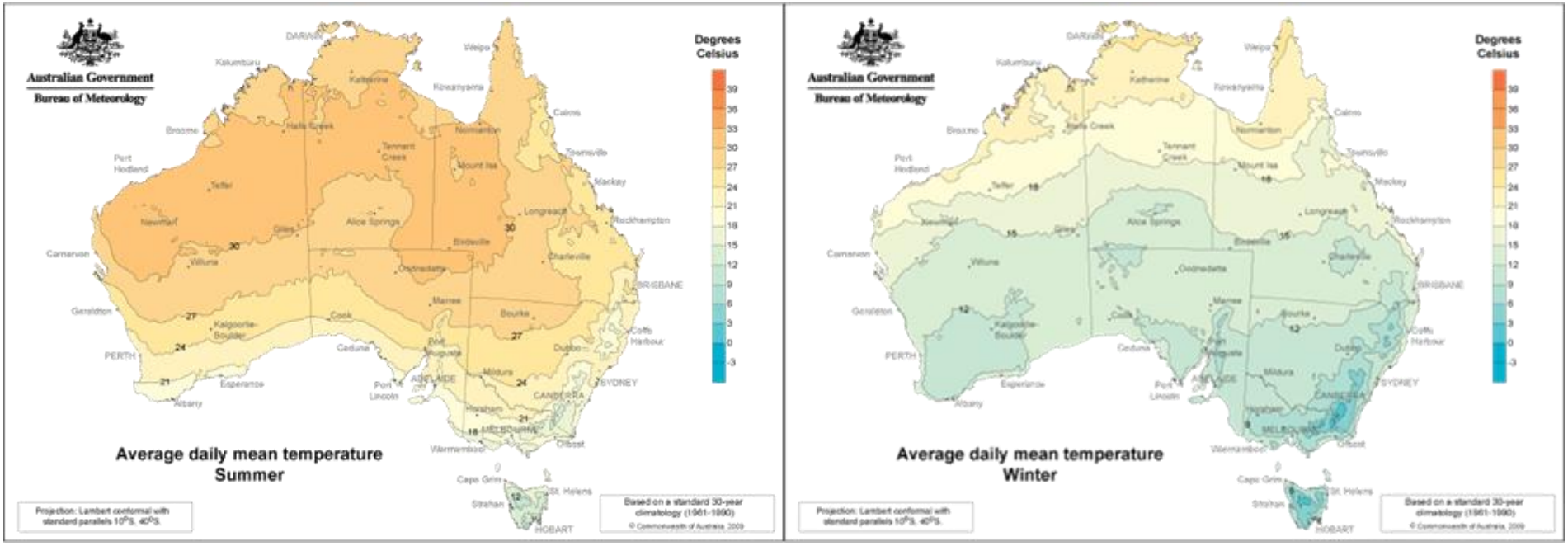

Figure 2-5: Average Daily Mean Temperatures in Summer (left) and Winter (right) (Source: BoM, 2016)

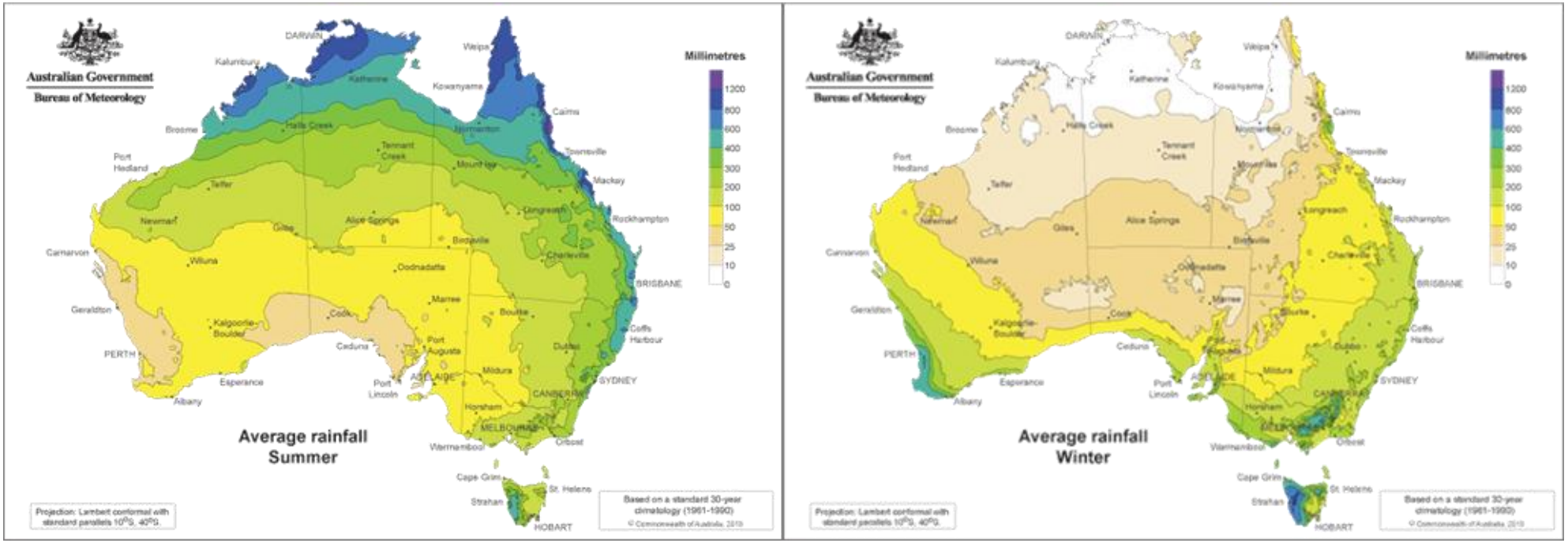

Figure 2-6: Average Rainfall in Summer (left) and Winter (right) (Source: BoM, 2016)

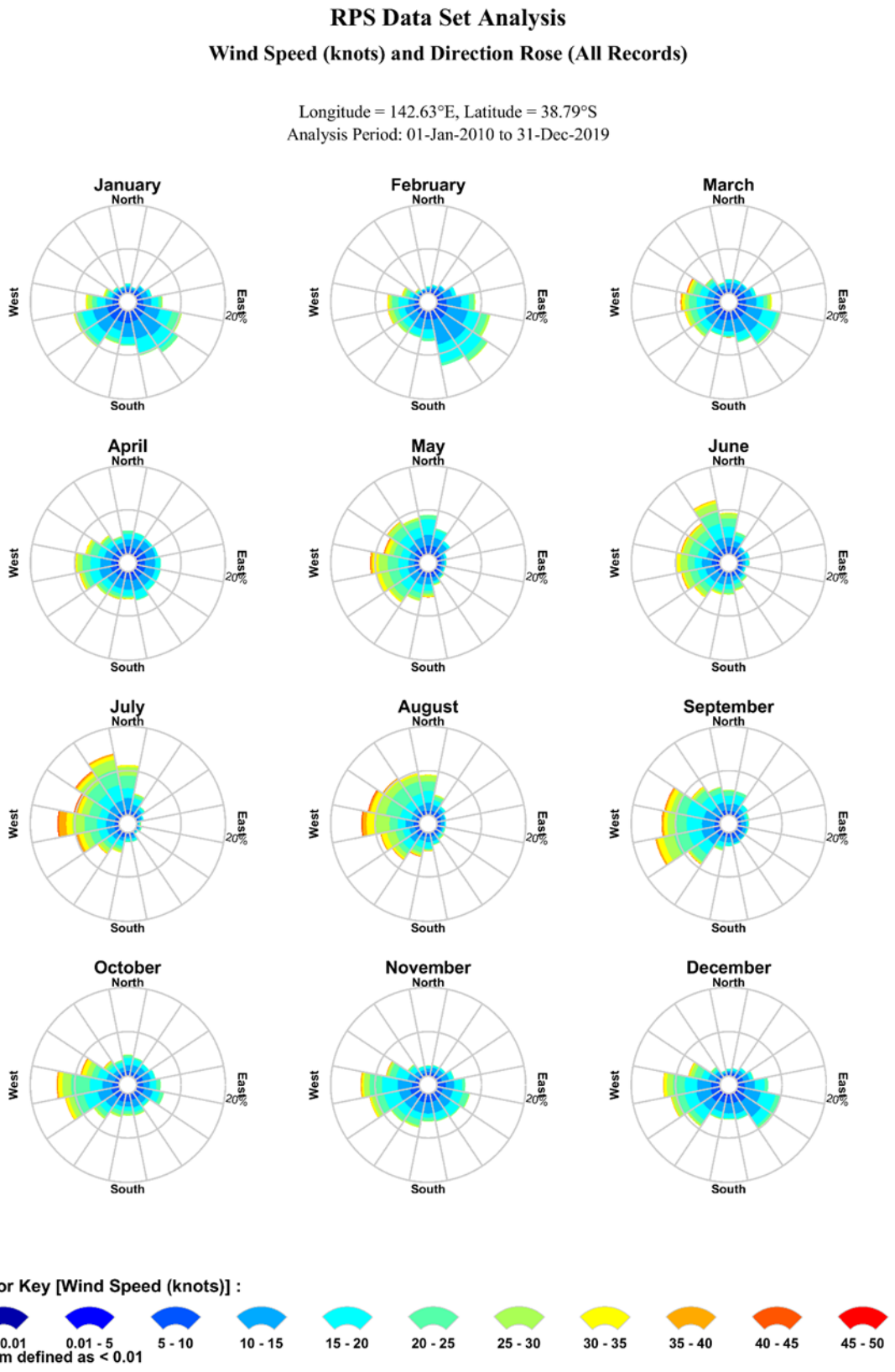

Figure 2-7: Modelled Monthly Wind Rose Distributions from 2010–2019 (inclusive) for the Node Nearby the Elanora-ST1 (Isabella) Well within the Otway Basin (RPS, 2024).

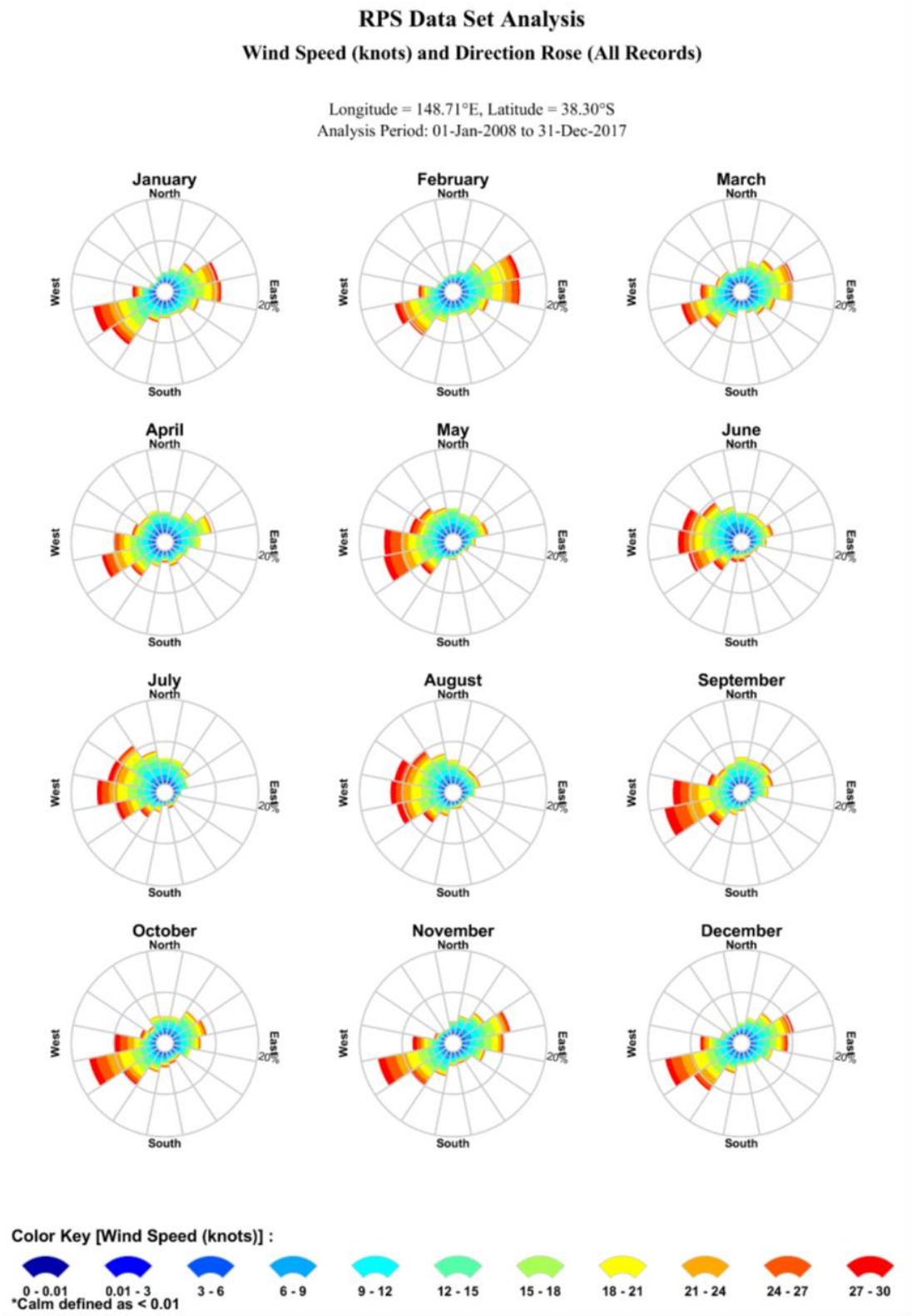

Figure 2-8: Monthly Wind Rose Distributions Derived from CFSR Model from 2008 to 2017 (inclusive), for the Wind Node Closest to the B2 and M2A Release Locations within the Gippsland Region (RPS, 2021).

Historical air quality data is available from the Environment Protection Authority (EPA) Victoria air quality monitoring stations, and Cape Grim Baseline Air Pollution Station on Tasmania's west coast, which is one of the three premier baseline air pollution stations in the World Meteorological Organisation-Global Atmosphere Watch (WMO-GAW) network, measuring greenhouse and ozone depleting gases and aerosols in clean air environments.

The Victorian air quality data is collected at 15 performance monitoring stations representing predominantly urban and industrial environments in the Port Phillip and Latrobe Valley regions of Victoria. Results are assessed against the requirements of the National Environment Protection (Ambient Air Quality) Measure for the pollutants carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulphur dioxide (SO_2), lead (Pb), particles less than 10 micrometres in diameter (PM_{10}) and particles less than 2.5 micrometres in diameter ($PM_{2.5}$). The most recent annual air monitoring report shows Victoria's air quality in 2015 was generally good with AAQ NEPM (Ambient Air Quality National Environmental Protection Measure) goals and standards being met for carbon monoxide (CO), nitrogen dioxide (NO2), Ozone (O_3) and sulphur dioxide (SO_2). There were some exceedances for particles.

The Cape Grim station monitors greenhouse gases (GHGs), including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and synthetic GHGs such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). Historical air quality data from Cape Grim show that most GHGs have shown continuous increases in concentration since the mid-to-late 1970s with carbon dioxide levels increasing by more than 15% since 1976, and concentrations of methane and nitrous oxide increasing by around 20% and 8% respectively since 1978. The increase in methane levels however has slowed recently and CFCs and halons are in decline. Increases have been attributed to anthropogenic causes, for example, fossil fuel consumption and agricultural practices (CSIRO, 2017). Increases have been attributed to anthropogenic causes, for example, fossil fuel consumption and agricultural practices (CSIRO, 2020).

2.4 Ambient Underwater Noise

Physical and biological processes contribute to natural background sound. Physical processes include that of wind and waves whilst biological noise sources include vocalisations of marine mammals and other marine species.

Iceberg calving, shoaling and disintegration has recently been identified as a dominant source of low frequency (<100 Hz) noise in the Southern Ocean. Wind is also a major contributor to noise between 30–100 Hz and can reach 85-95 dB re 1µPa^2/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 1µPa^2/Hz and magnitude four earthquakes have been reported to have spectral levels reaching 119 dB re 1µPa^2/Hz at frequency ranges 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). Figure 2-9 provides generalised ambient noise spectra attributable to varies sources completed by Wenz (1962; cited in Richardson et al. 1995).

The South-east Marine Region is one of the busiest shipping regions in Australia and the Bass Strait is one of Australia's busiest shipping routes. Typical predominant frequencies of commercial shipping occur within the range of 10 Hz to 1 kHz with some frequencies reaching the tens of kHz (Southall et al., 2017). A study of multiple vessel classes commissioned by the Vancouver Fraser Port Authority (2018) measured and was able to attribute source levels to those different classes of vessels. The quietest vessel class were naval vessels, with a lowest radiated noise level of 160.9 dB re: 1 µPa^{2}m^2.s. The loudest class was container ships over 200 m in length. The highest mean (average)

radiated noise level at 189.7 dB re: 1 µPa^{2}m^2.s and loudest recorded ship in class of 204.2 dB re: 1 µPa^{2}m^2.s.

Since 2009 (paused 2017-2018 due to funding gap), the Integrated Marine Observing System (IMOS) has been recording underwater sound south of Portland, Victoria (38° 32.5' S, 115° 0.1' E). Prominent sound sources identified in recordings include blue and fin whales at frequencies below 100 Hz, ship noise at 20 to 200 Hz and fish at 1 to 2 kHz (Erbe et al. 2016). 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). Biological sound sources including dolphin vocalisations were also recorded (Przeslawski et al. 2016). Ambient noise level in the Gippsland Basin at 100-500 Hz varied depending on recording location between 89.2 to 109.9 dB re 1 µPa^2/Hz, likely due to a varied increase in distance from shipping activity, and water depth.

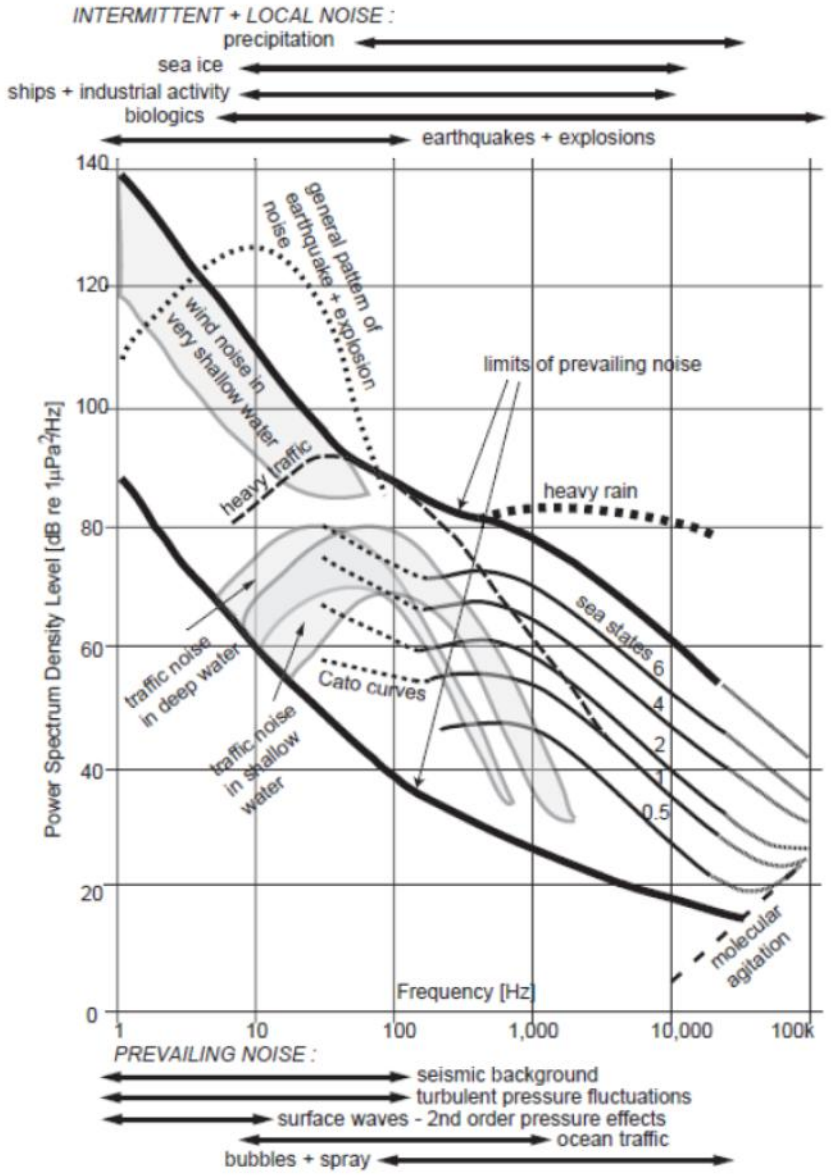

Figure 2-9: Generalised Ambient Noise Spectra (Source: Richardson et al., 1995)

3.0 Ecological Environment

3.1 Shorelines

The coastal environment throughout southern and eastern Australia is varied, and includes areas of rocky cliffs, sandy beaches, and tidal flats (Table 3-1). Each of these shoreline types has the potential to support different flora and fauna assemblage due to the different physical factors (e.g., waves, tides, light etc.) influencing the habitat.

Smartline[1] established a nationally consistent map of the coastal landform types (geomorphology) of continental Australia and most adjacent islands (OzCoasts, 2015a; Sharples et al., 2009). The single line consists of multiple attributes describing landform characteristics of the coastal area (defined as a nominal distance of 500 m inland and offshore from mean high water), including distinct attributes for the backshore, intertidal and subtidal regions (Figure 3-1) (Sharples et al., 2009).

The Smartline system also includes an 'exposure' attribute, which is the degree of exposure of a shoreline segment to oceanic swell and storm wave energy (i.e., it is not a measure of actual wave energy received). The categories represent the degree of exposure or sheltering of a coastal segment, e.g. coastal lagoons and estuaries are ranked with 'very low' exposure, while open coast environments may be 'moderate' or 'high'. This attribute of Smartline was primarily sourced from previous OSRA shoreline mapping (Sharples et al., 2009).

The coast of southern and eastern Australia has been mapped to show the variation in shoreline type (backshore, intertidal and subtidal attributes) and shoreline exposure (Figure 3-2).

Table 3-1: Shoreline Types within the Environmental Sectors

Shoreline type	Description
Cliff	Hard and soft rock features, over five metres in height. This is a common shoreline type along stretches of the Tasmanian coast, including Cape Pillar, Cape Raoul, and Cape Hauy, on the Tasman Peninsula.
Rocky	Hard and soft rocky shores, including bedrock outcrops, platforms, low cliffs (less than five metres), and scarps. Depending on exposure, rocky shores can be host to a diverse range of flora and fauna, including barnacles, mussels, sea anemones, sponges, sea snails, starfish and algae. Australian fur-seals are also known to use rocky shores for haul-out and/breeding. This is common shoreline along southern and eastern Australian coasts, including the limestone coast and features along the Great Ocean Road, Victoria.
Gravel/Cobble	Beaches dominated by unconsolidated sediment with particle sizes > 2mm. Gravel beaches are typically steeper than sandy beaches, and fauna can include a variety of infauna, or small crustaceans. These are often co-located near cliff or rocky shoreline types; therefore similarly, are quite common along the southern Tasmania coast.
Sandy	Sandy beaches are characterised by sand-sized (0.063–2 mm) particles; also includes mixed sandy beaches (i.e., sediments may include muds or gravel, but sand is the dominant particle size). Beaches are dynamic environments, naturally fluctuating in profile and particle distribution response to external forcing factors (e.g., waves, currents etc). Sandy

[1] The Smartline Project was commissioned by the Department of Climate Change and Geoscience Australia in 2007.

Shoreline type	Description
	beaches can support a variety of infauna and provide nesting and/or foraging habitat to shorebirds and seabirds and pinnipeds. Sand particles vary in size, structure and mineral content; this in turn affects the shape, colour and inhabitants, of the beach. This shoreline type is very common along the entire coast, including Ninety Mile Beach (East Gippsland, Victoria) and Apollo Bay (east of Cape Otway, Victoria).
Muddy	Shores with predominantly muddy (particle sizes <0.063 mm) shores. May also include mixed sediments (e.g., sands or gravel), where the mud fraction is dominant. This shoreline type typically occurs in more sheltered environments like estuaries or bays, including River Tamar estuary in northern Tasmania.
Tidal Flat	Shorelines exposed to high tidal variation; includes both sandy and muddy sediments. This shoreline type can often be associated with mangrove or saltmarsh environments. This shoreline type is typically patchy in southern Australia but does occur (e.g., Corner Inlet, Victoria); it is more common in northern Australia (e.g. Queensland).
Artificial	Man-made structures along the coast, including breakwaters, piers, jetties. This is a common feature in urban areas, although does not typically extend for long stretches of coast.

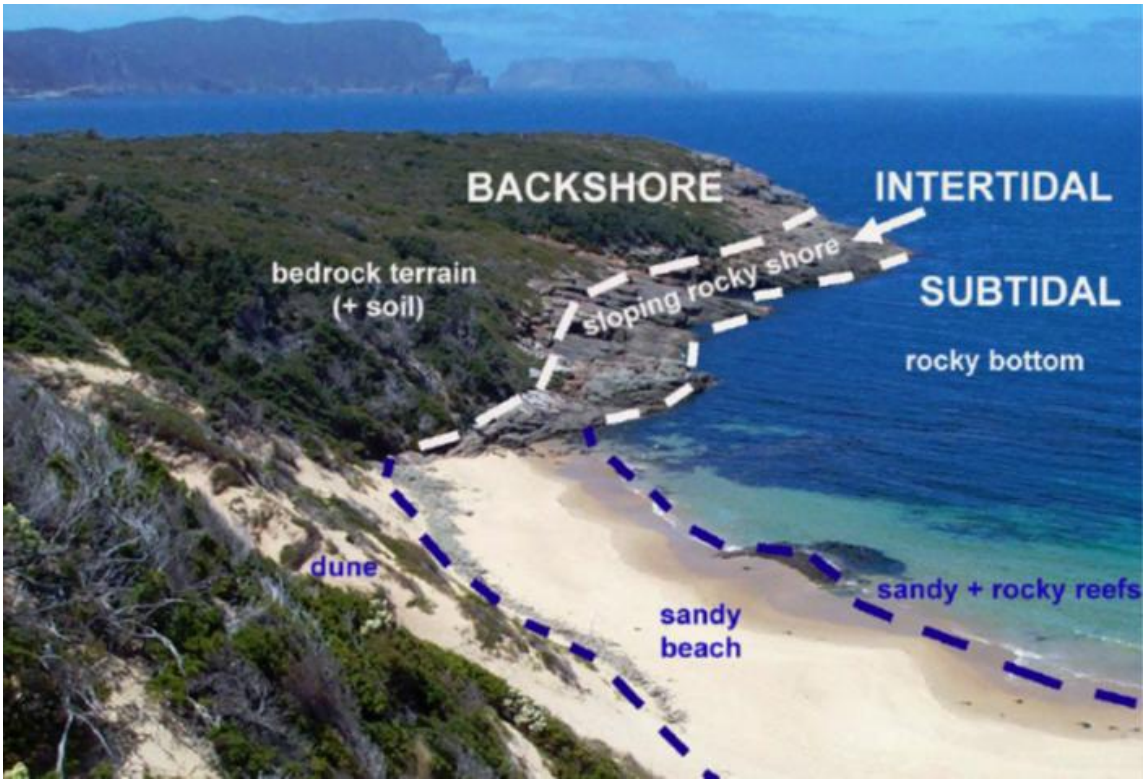

Figure 3-1: Example Illustration Showing Backshore, Intertidal and Subtidal zones within a Coastal Area (Source: Sharples et al., 2009)

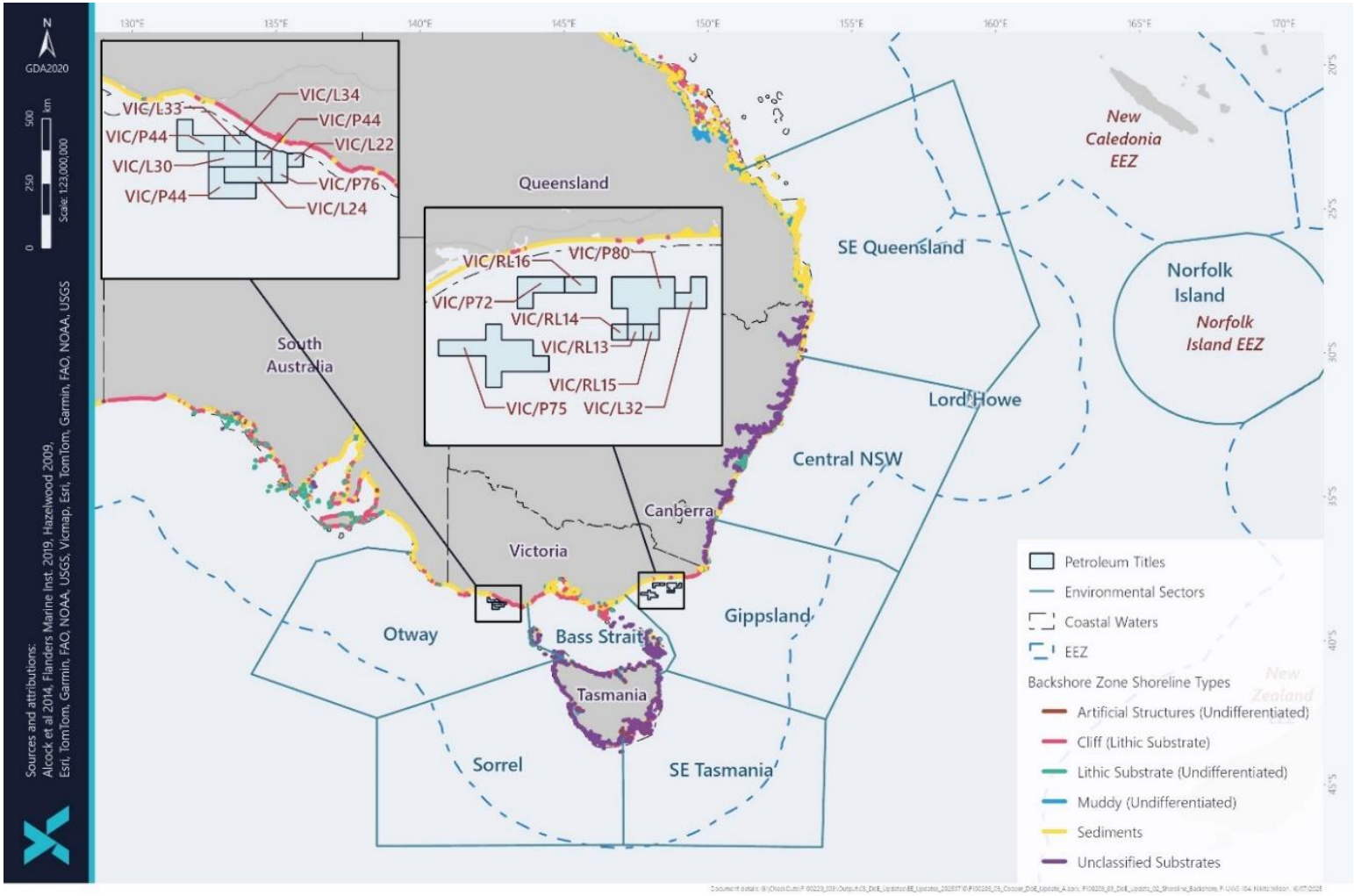

Figure 3-2: Shoreline Types (Backshore) and Shoreline Exposure within the Environmental Sectors

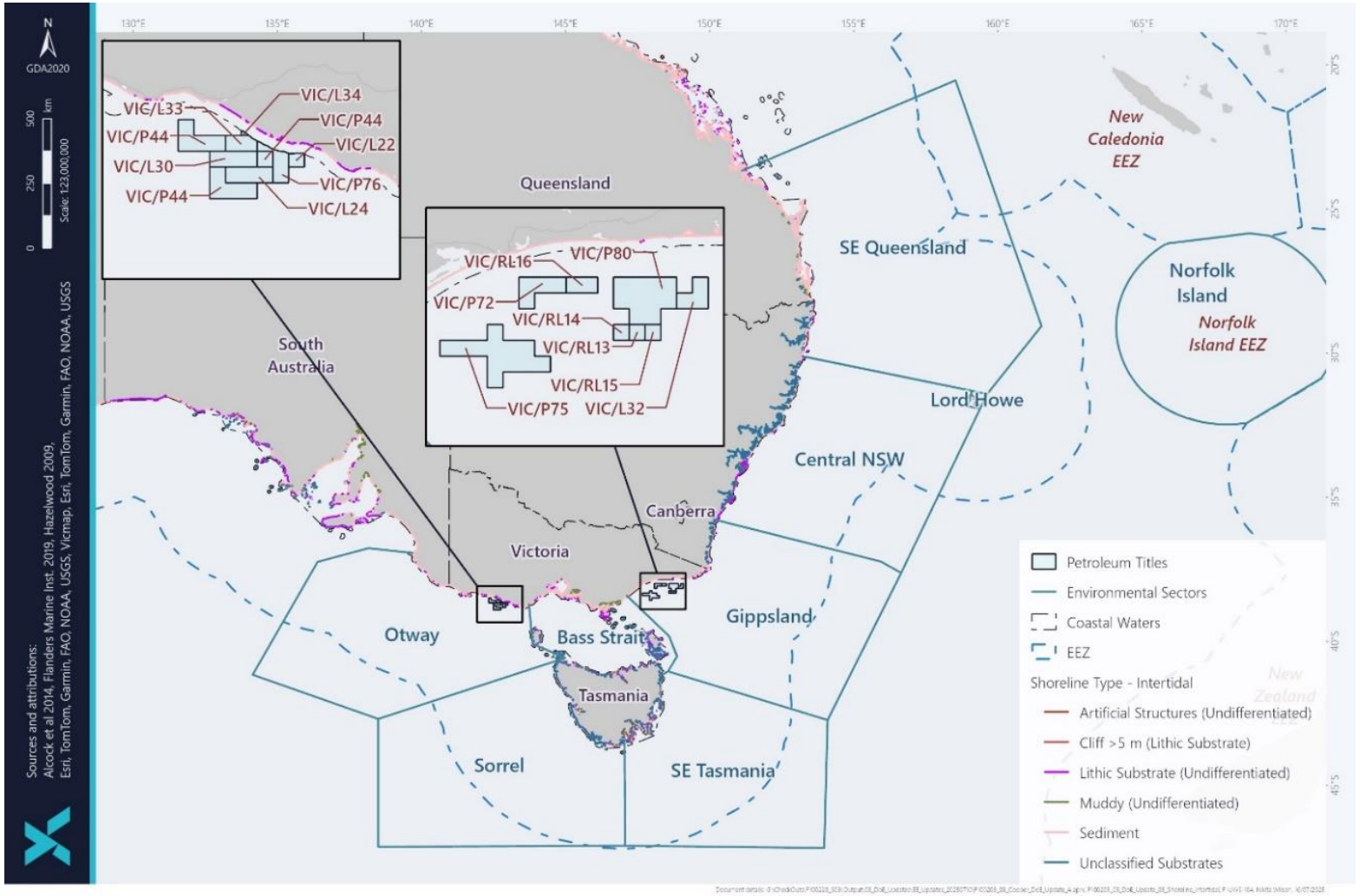

Figure 3-3: Shoreline Types (Intertidal) and Shoreline Exposure within the Environmental Sectors

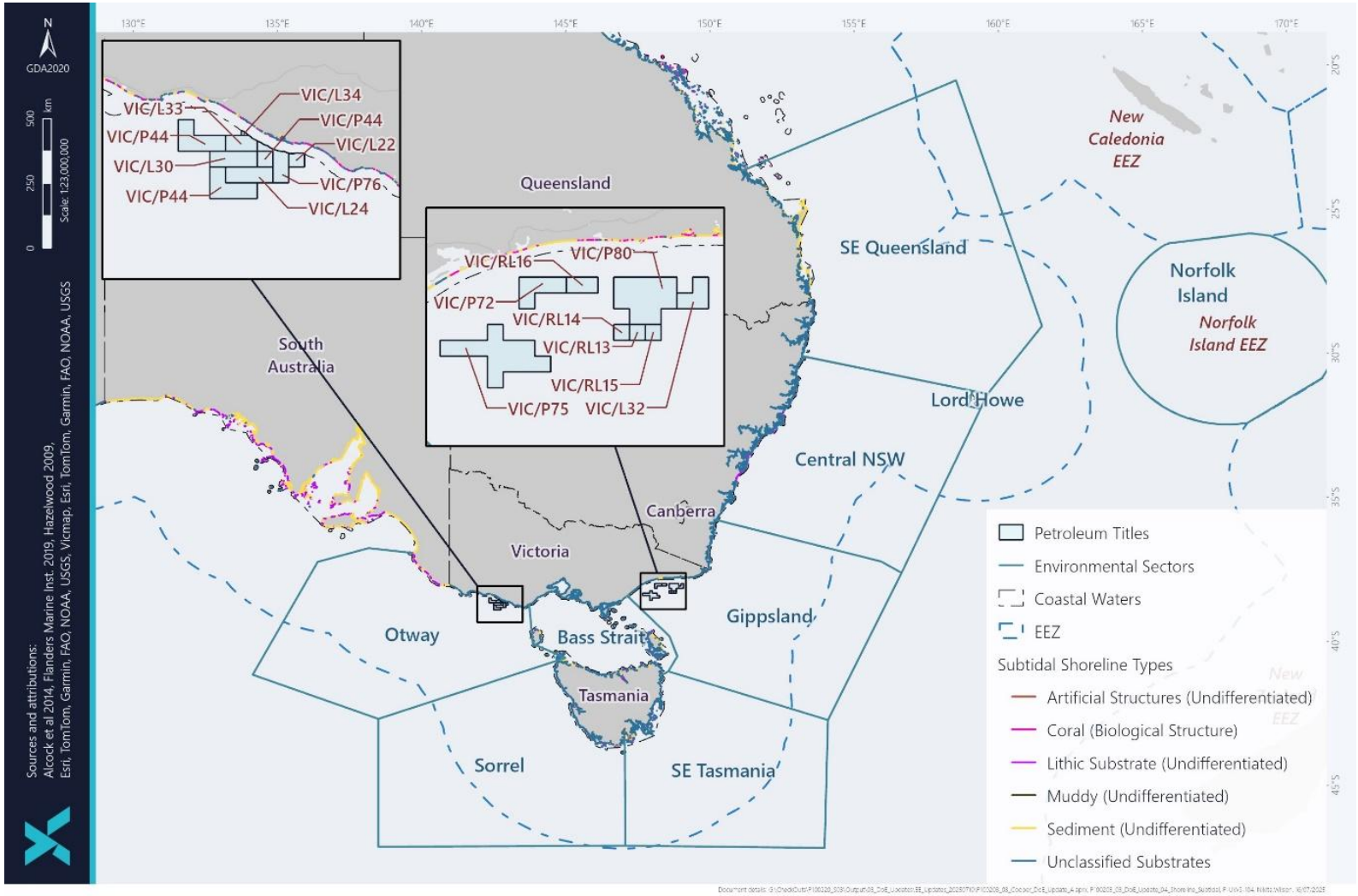

Figure 3-4: Shoreline Types (Subtidal) and Shoreline Exposure within the Environmental Sectors

3.2 Mangroves

Mangroves have been recorded in all Australian coastal states except Tasmania (Table 3-2, Figure 3-5). Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie et al., 2006). Mangrove forests can help stabilise coastal sediments, provide a nursery ground for many species of fish and crustacean, and provide shelter or nesting areas for seabirds (McClatchie et al., 2006). The 'Mangrove Dominated' habitat class includes areas with greater than 10% coverage of mangroves (Mount and Bricher, 2008; OzCoasts, 2015b). The mangroves in Victoria, found mostly along sheltered sections of the coast within inlets or bays, are the most southerly extent of mangroves found in the world (MESA, 2015). One species of mangrove, the white or grey mangrove (*Avicennia marina*) is the only species found in Victoria and is known to occur at Western Port and Corner Inlet, and also at larger estuaries like the Yarran and Barwon Rivers (Figure 3-5). The number of mangrove species increases as they occur further north, with six species found in New South Wales, and 39 in Queensland (MESA, 2015). In New South Wales, mangroves typically occur within tidal estuaries, coastal lakes and bays; but can occur across a diverse range of coastal and estuarine environments in Queensland (MESA, 2015).

The Estuarine, Coastal and Marine (ECM) National Habitat Map project[2] established a nationally consistent set of broad-scale habitat maps for Australia (Mount and Bricher, 2008). For the intertidal and subtidal environment, an area extending between approx. highest astronomical tide (HAT) and the outer limit of the photic benthic zone (approximately the 50-70 m depth contour), habitat classes were attributed using the National Intertidal/Subtidal Benthic (NISB) habitat classification scheme. The 'Mangrove Dominated' habitat class includes areas with greater than 10% coverage of mangroves (Figure 3-5) (Mount and Bricher, 2008; OzCoasts 2015b).

Table 3-2: Presence of Mangroves within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Mangroves (Dominant Habitat)[1]		✓	✓			✓	✓	✓	

[1] Mangrove as a dominant intertidal/subtidal habitat determined from national mapping available from OzCoasts (2015b), and local flora reports for Lord Howe Island (Sheringham et al., 2016).

[2] The Estuarine, Coastal and Marine National Habitat Map project was prepared for Department of Climate Change, and Land & Water Australia (specifically the National Land and Water Resources Audit).

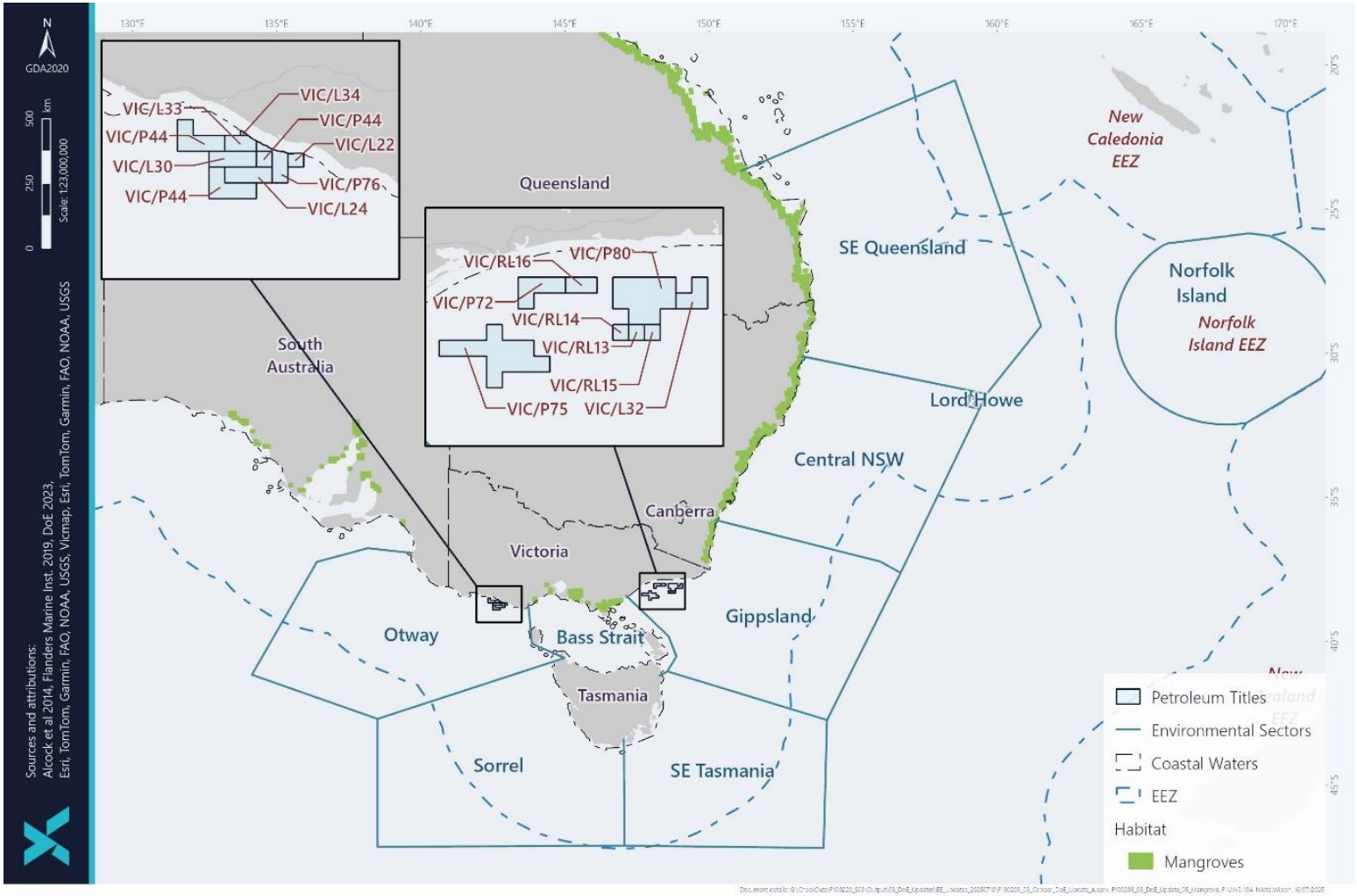

Figure 3-5: Distribution of Mangrove Dominated Habitat within the Photic Zone.
Note: Map shows the 'Mangrove Dominated' habitat from the NISB Habitat Classification Scheme.

3.3 Saltmarshes

Saltmarshes are terrestrial halophytic (salt-adapted) ecosystems that mostly occur in the upper-intertidal zone and are widespread along the coast (Table 3-3, Figure 3-6). The 'Saltmarsh Dominated' habitat class includes areas with greater than 10% coverage of saltmarshes (Mount and Bricher, 2008; OzCoasts 2015b).

Typically, these communities are dominated by dense stands of halophytic plants such as herbs, grasses and low shrubs. The diversity of saltmarsh plant species increases with increasing latitude (in contrast to mangroves). The vegetation in these environments is essential to the stability of the saltmarsh, as they trap and bind sediments. The sediments are generally sandy silts and clays and can often have high organic material content. Saltmarshes provide a habitat for a wide range of both marine and terrestrial fauna, including infauna and epifaunal invertebrates, fish and birds.

Saltmarsh is found along many parts of the Victorian coast, although is most extensive in western Port Phillip Bay, northern Western Port, within the Corner Inlet-Nooramunga complex, and behind the sand dunes of Ninety Mile Beach in Gippsland (Boon et al., 2011) (Figure 3-6). Saltmarsh environments are much more common in northern Australia (e.g., Queensland), compared to the temperate and southern coasts (i.e. New South Wales, Victoria, Tasmania) (Boon et al., 2011).

Table 3-3: Presence of Saltmarsh within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Saltmarsh (Dominant Habitat)[1]	✓	✓	✓	✓	✓	✓	✓	✓	
TEC: Subtropical and Temperate Coastal Saltmarsh[2]	✓	✓	✓	✓	✓	✓	✓		

[1] Saltmarsh as a dominant intertidal/subtidal habitat determined from national mapping available from OzCoasts (2015b), and local flora reports for Lord Howe Island (Sheringham et al., 2016).
[2] Presence of TEC determined from EPBC Protected Matters search reports.

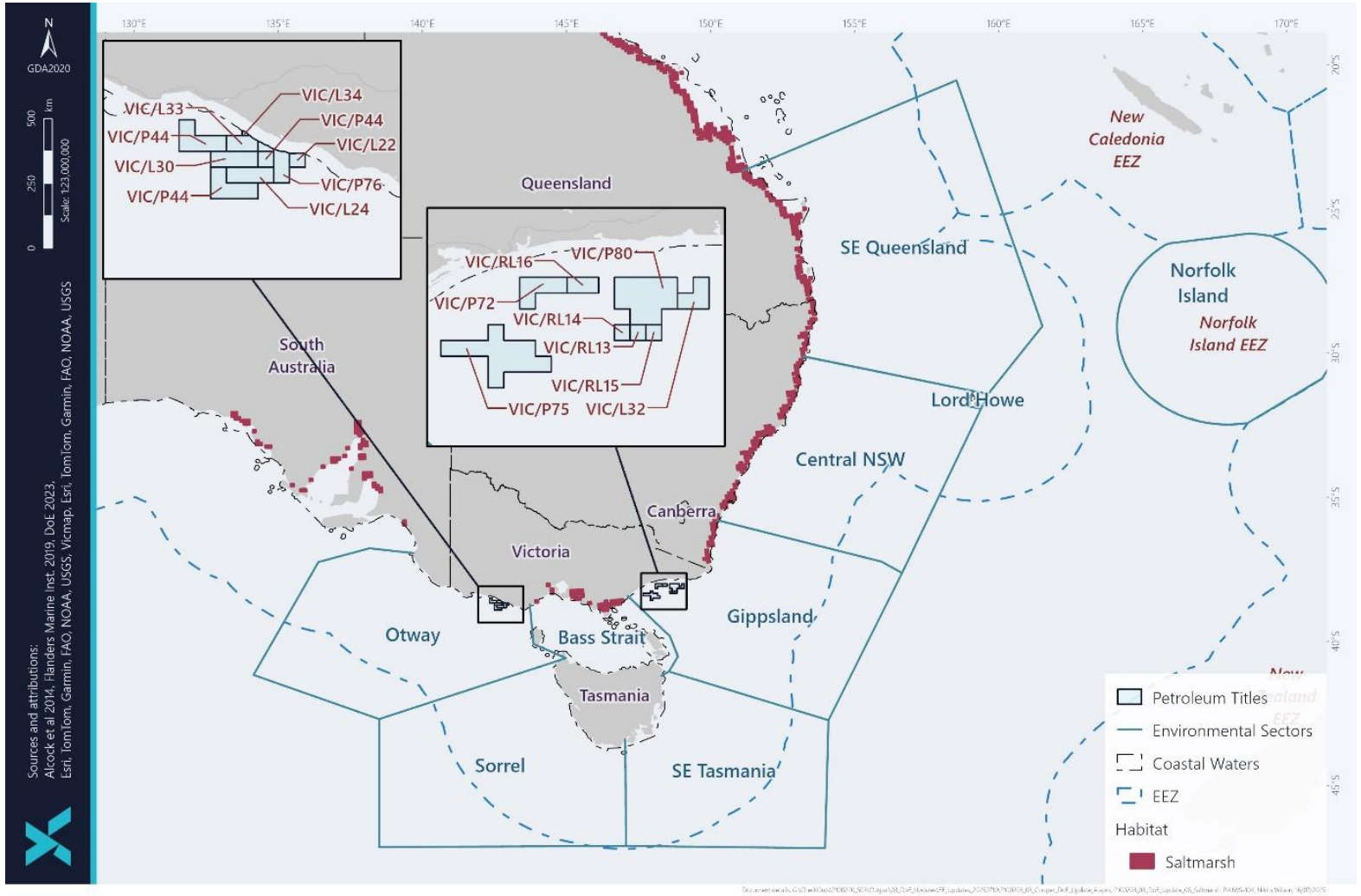

Figure 3-6: Distribution of Saltmarsh Dominated Habitat within the Photic Zone.
Note: Map shows the 'Saltmarsh Dominated' Habitat from the NISB Habitat Classification Scheme.

3.3.1 TEC: Assemblages or Species Associated with Open-coast Salt-Wedge Estuaries of Western and Central Victoria Ecological Community

The Assemblages or species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community is listed as an endangered TEC under the EPBC Act. The ecological community is a collection of native plants, animals and micro-organisms associated with the dynamic salt-wedge estuary systems that occur within the temperate climate, microtidal regime (<2 m), high wave energy coastline of western and central Victoria (DEE, 2018a). The composition of flora, Protista and fauna species may vary across the different estuaries within the ecological community. Invertebrate fauna species include worms, molluscs, crabs with estuarine fish to be considered the apex predators within the ecological community (DEE, 2018a). They contribute high levels of productivity to coastal and nearshore marine environments, and provide important refuge, nursery or breeding habitat for a wide range of invertebrates, fish and birds.

Of critical importance to the survival of the ecological community is a hydrological regime sufficient to ensure salinity stratification; salt-wedge dynamics; connectivity; and ecological function between the estuary, river and ocean (and floodplain wetland components where applicable). Changes in catchment management (e.g., land-use changes that change water flow, sediments, water seasonality etc.) have the potential to, and have previously, affected the survival of the ecological community (DELWP, 2017).

The ecological community currently encompasses 25 estuaries and is defined by the border between South Australia and Victoria and the most southerly point of Wilsons Promontory (refer to Table 3-4 and Figure 3-7) (DEE, 2018a).

Table 3-4: Presence of Assemblages or Species Associated with Open-coast Salt-wedge Estuaries of Western and Central Victoria

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
TEC: Assemblages or species associated with open-coast salt-wedge estuaries of western and central Victoria	✓	✓							

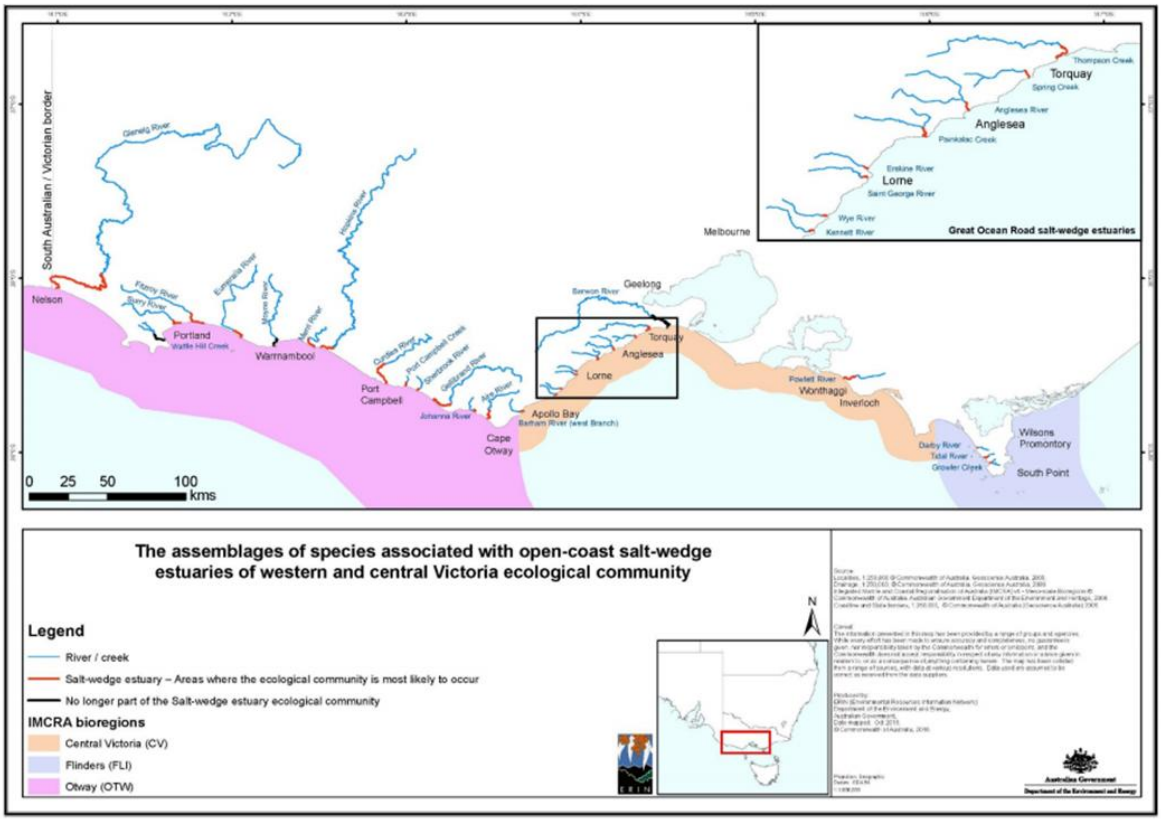

Figure 3-7: Distribution of Assemblages of species associated with Open-coast Salt-wedge Estuaries of Western and Central Victoria ecological community (Source: DEE, 2018a)

3.3.2 TEC: Subtropical and Temperate Coastal Saltmarsh

The 'Subtropical and Temperate Coastal Saltmarsh' is listed as a vulnerable Threatened Ecological Community (TEC) under the EPBC Act, and it's known distribution includes the southern and eastern coasts of Australia (Figure 3-8). The Subtropical and Temperate Coastal Saltmarsh ecological community occurs within a relatively narrow margin along the Australian coast, within the subtropical and temperate climatic zones; and includes coastal saltmarsh occurring on islands within these climatic zones (Threatened Species Scientific Committee (TSSC), 2013a). The physical environment for the ecological community is coastal areas under regular or intermittent tidal influence (TSSC, 2013a).

The ecological community consists mainly of salt-tolerant vegetation (halophytes) including grasses, herbs, sedges, rushes and shrubs (TSSC, 2013a). Many species of non-vascular plants are also found in saltmarsh, including epiphytic algae, diatoms and cyanobacterial mats (TSSC, 2013a). The ecological community is inhabited by a wide range of infaunal and epifaunal invertebrates, and temporary inhabitants such as prawns, fish and birds (and can often constitute important nursery habitat for fish and prawn species) (TSSC, 2013a). Insects are also abundant and an important food source for other fauna, with some species being important pollinators (TSSC, 2013a). The dominant marine residents are benthic invertebrates, including molluscs and crabs that rely on the sediments, vascular plants, and algae, as providers of food and habitat across the intertidal landscape (TSSC, 2013a).

The key threats affecting the ecological community include clearing and fragmentation, infilling, altered hydrology/tidal restriction, invasive species, climate change, mangrove encroachment,

damage from recreational activities, pollution (including oil spills), eutrophication, acid sulphate soils, grazing, insect control, salt and other mining activities, and inappropriate fire regimes (TSSC, 2013a).

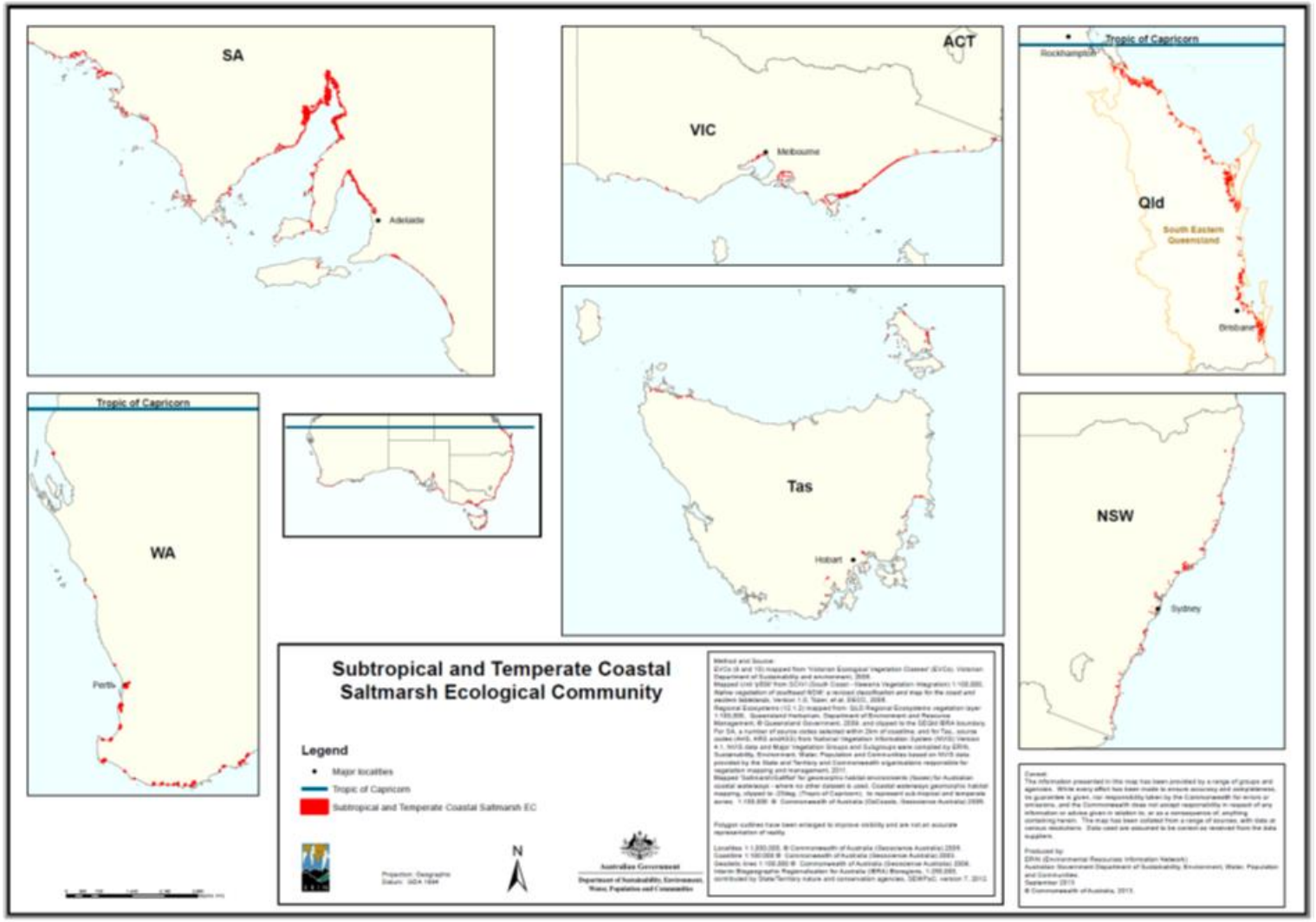

Figure 3-8: Distribution of the TEC Subtropical and Temperate Coastal Saltmarsh (Source: TSSC, 2013a)

3.4 Wetlands

3.4.1 TEC: Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community

The Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community is listed as an endangered TEC under the EPBC Act. The ecological community occurs in sub-tropical, sub-humid and temperate climate zones from Curtis Island, north of Gladstone, in Queensland to Bermagui in southern New South Wales (Table 3-5, Figure 3-9, Figure 3-10, and Figure 3-11). The TEC is typically found on coastal flats, floodplains, drainage lines, lake margins, wetlands, and estuarine fringes where soils are occasionally saturated, water-logged, or inundated (DEE, 2018b).

The Coastal Swamp Oak Forest is often found in association with other vegetation types such as coastal saltmarsh, mangroves, freshwater wetlands, littoral rainforests or swamp sclerophyll forests. The vegetation of the Coastal Swamp Oak Forest provides diverse habitat values and is a source of food for a wide range of fauna, particularly the crevices and hollows within older trees. The ecological community supports a range of fauna and flora located coastal catchments at elevations <20 m above sea level. Many fauna species within the ecological community are listed as threatened under State and/or Commonwealth legislations (DEE, 2018b).

Table 3-5: Presence of Coastal Swamp Oak within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
TEC: Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community			✓			✓	✓		

[1] Presence of TEC determined from EPBC Protected Matters search reports.

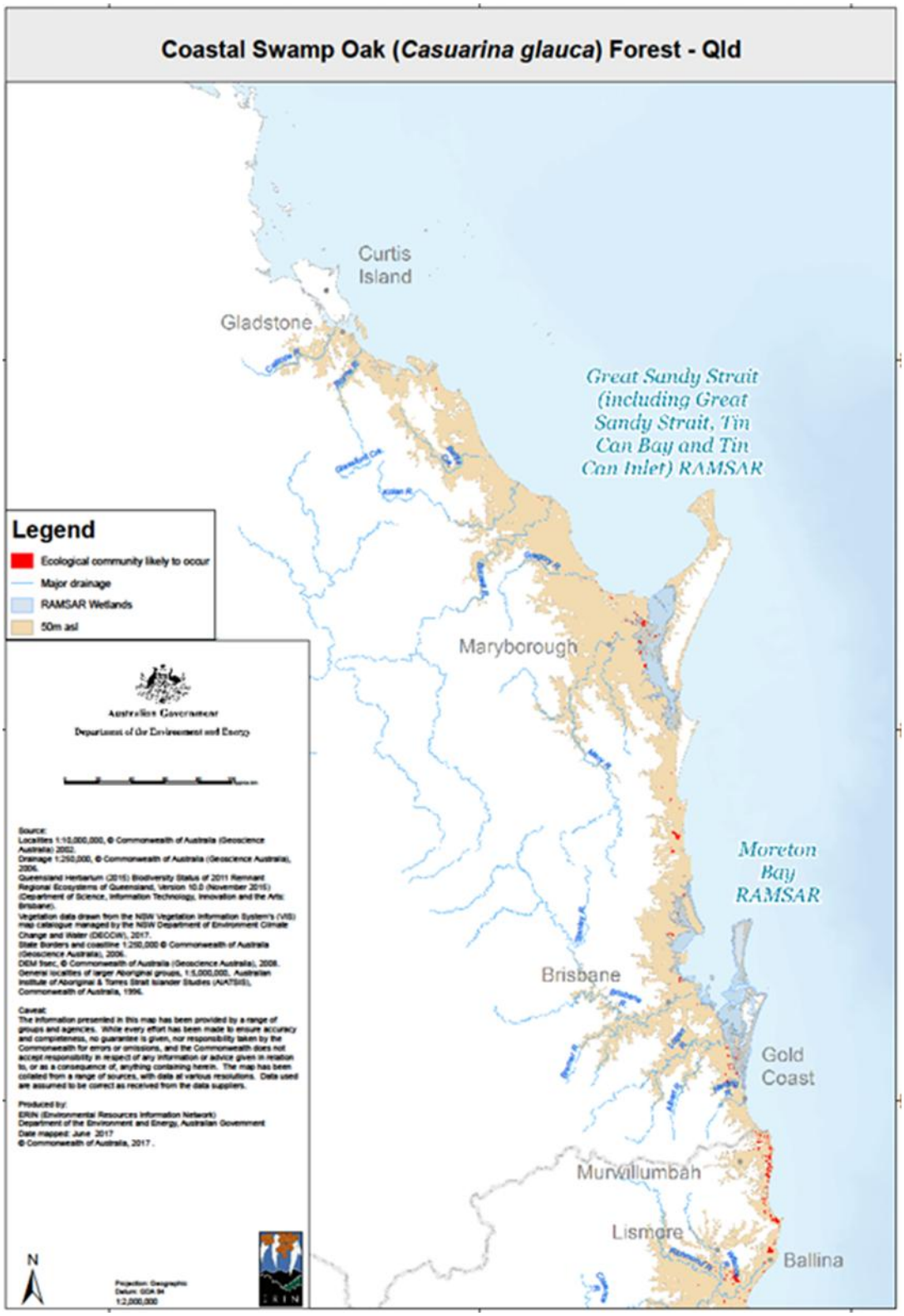

Figure 3-9: Estimated Distribution of the Coastal Swamp Oak (Casuarina glauca) Forest – QLD (Source: DEE, 2018b)

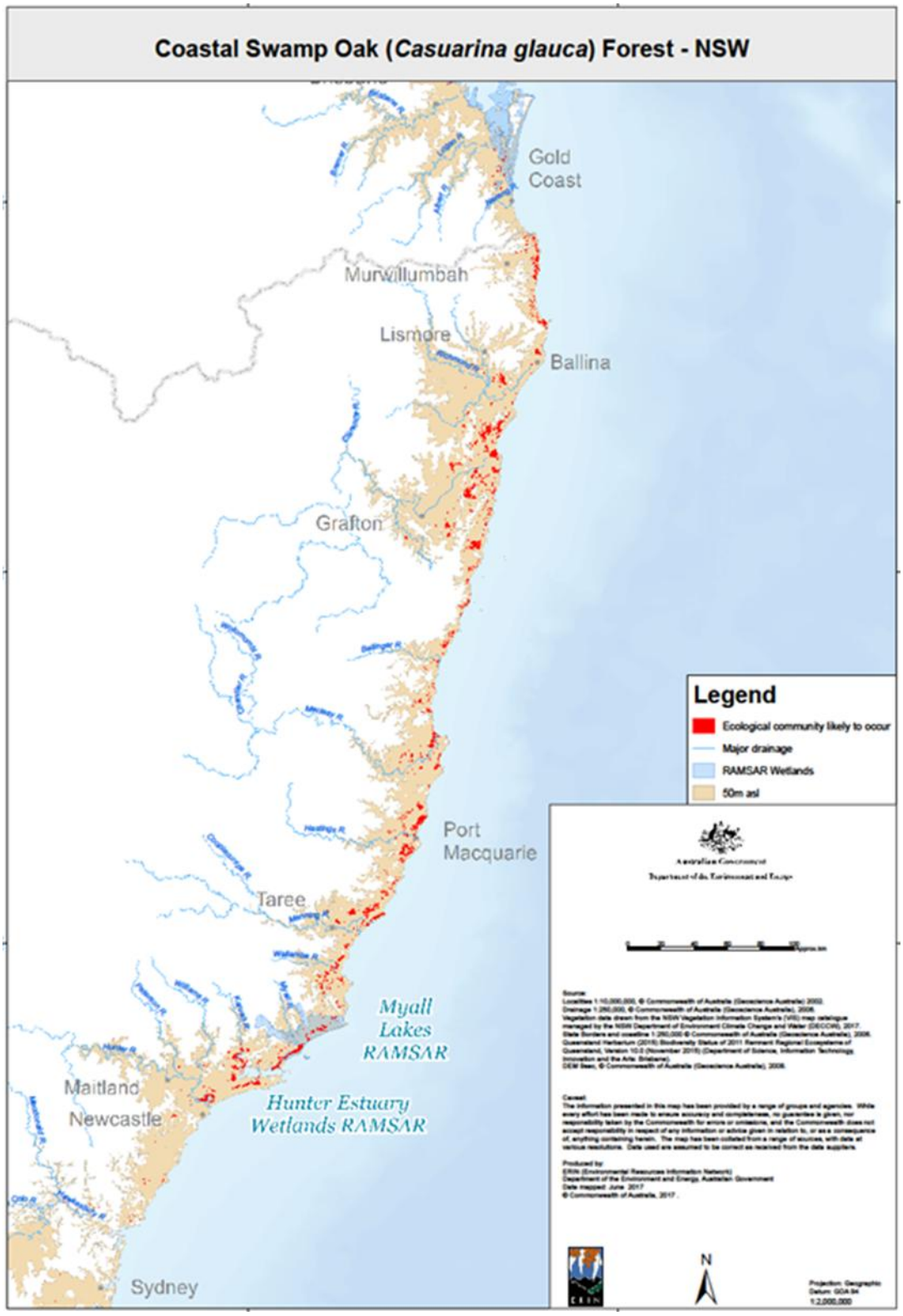

Figure 3-10:Estimated Distribution of the Coastal Swamp Oak (Casuarina glauca) forest – NSW (1) (Source: DEE, 2018b)

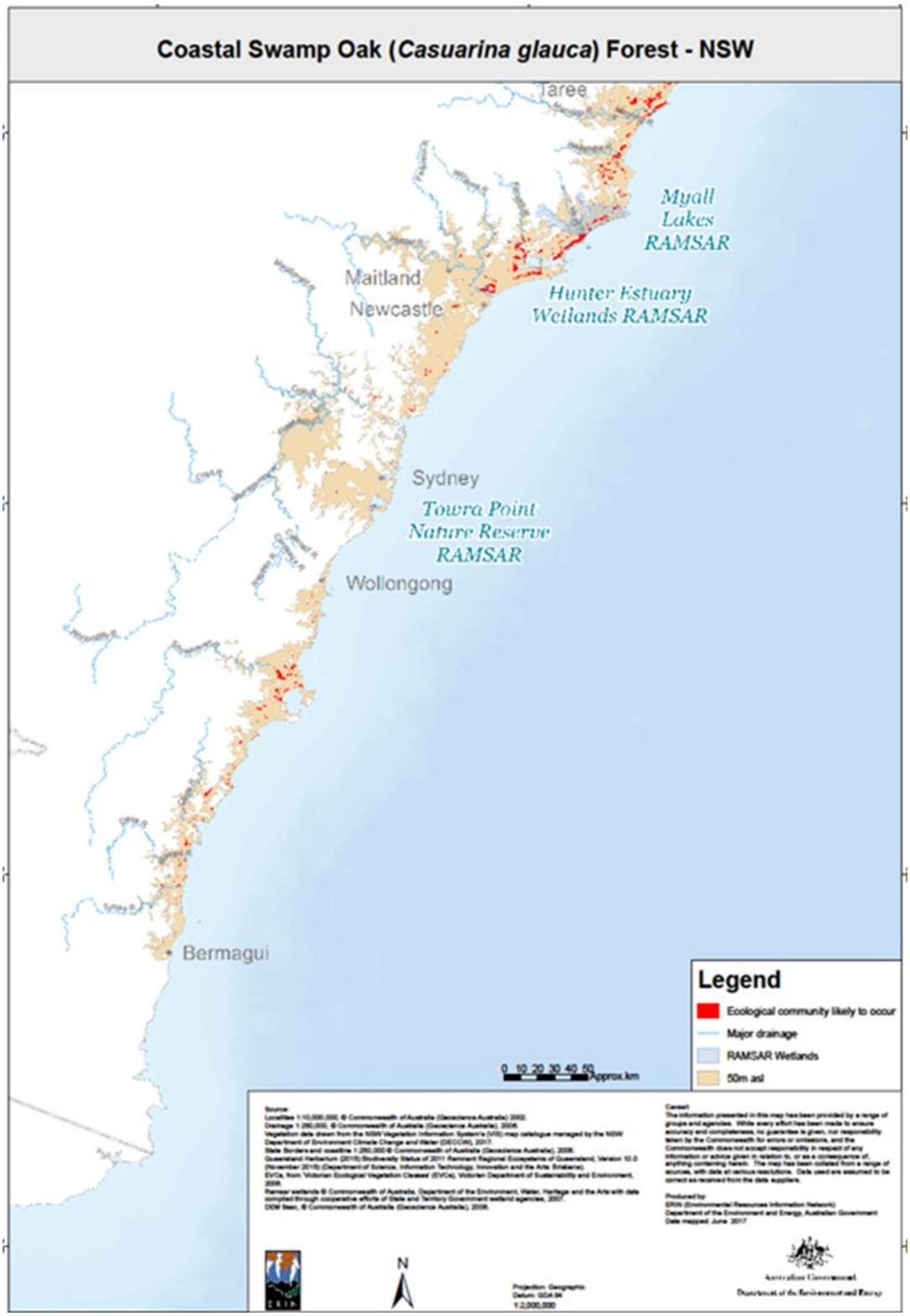

Figure 3-11: Estimated Distribution of the Coastal Swamp Oak (Casuarina glauca) forest – NSW (2) (Source: DEE, 2018b)

3.4.2 TEC: Karst Springs and Associated Alkaline Fens of the Naracoorte Coastal Plain Bioregion

The Karst springs and associated alkaline fens of the Naracoorte Coastal Plain Bioregion is listed as an endangered TEC under the EPBC Act. The ecological community includes plants, animals, and other organisms associated with a groundwater dependant ecosystem that occurs in association with the Tertiary limestone Gambier Karst Province of the Otway Basin on coastal, low-lying areas. The primary defining features of the TEC are the underlying limestone geology, predominantly karst fed (alkaline) springs, soaks, pools, or streams, and fringing fens (herblands, peatlands, sedgelands and/or shrubland vegetation) (DAWE, 2020a).

The Karst Springs and alkaline fens are located in the Gambier Karst Province of the Otway Basin in south east South Australia and south west Victoria (Figure 3-12). Known occurrences of the ecological community are scattered across the near-coastal areas from near Beachport in South Australia to west of Portland Victoria (DAWE, 2020) (Table 3-6).

The TEC occurs near the boundary between two major Australia biogeographic regions: the temperate southern and eastern Australian Bassian region and the semi-arid inland Eyrean region. The Karst springs and alkaline fens provide shelter, breeding, nesting habitats and other resources for a range of aquatic, terrestrial and volant vertebrates and invertebrates (DAWE, 2020).

The Boandik and Gunditjmara people have a special connection and affinity with many of the places and species associated with the Karst springs and alkaline fens. The Karst springs and alkaline fens are home to important Totemic species as well as resources that have been sustained Indigenous people for thousands of years (DAWE, 2020a).

The key threats affecting the ecological community include: hydrological changes, vegetation clearance, habitat loss and fragmentation, invasive and introduced species and diseases, climate change, grazing, change in fire regimes and unregulated recreational disturbance.

Table 3-6: Presence of Karst Springs and Associated Alkaline Fens within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
TEC: Karst springs and associated alkaline fens of the Naracoorte coastal plain bioregion	✓								

[1] Presence of TEC determined from EPBC Protected Matters search reports.

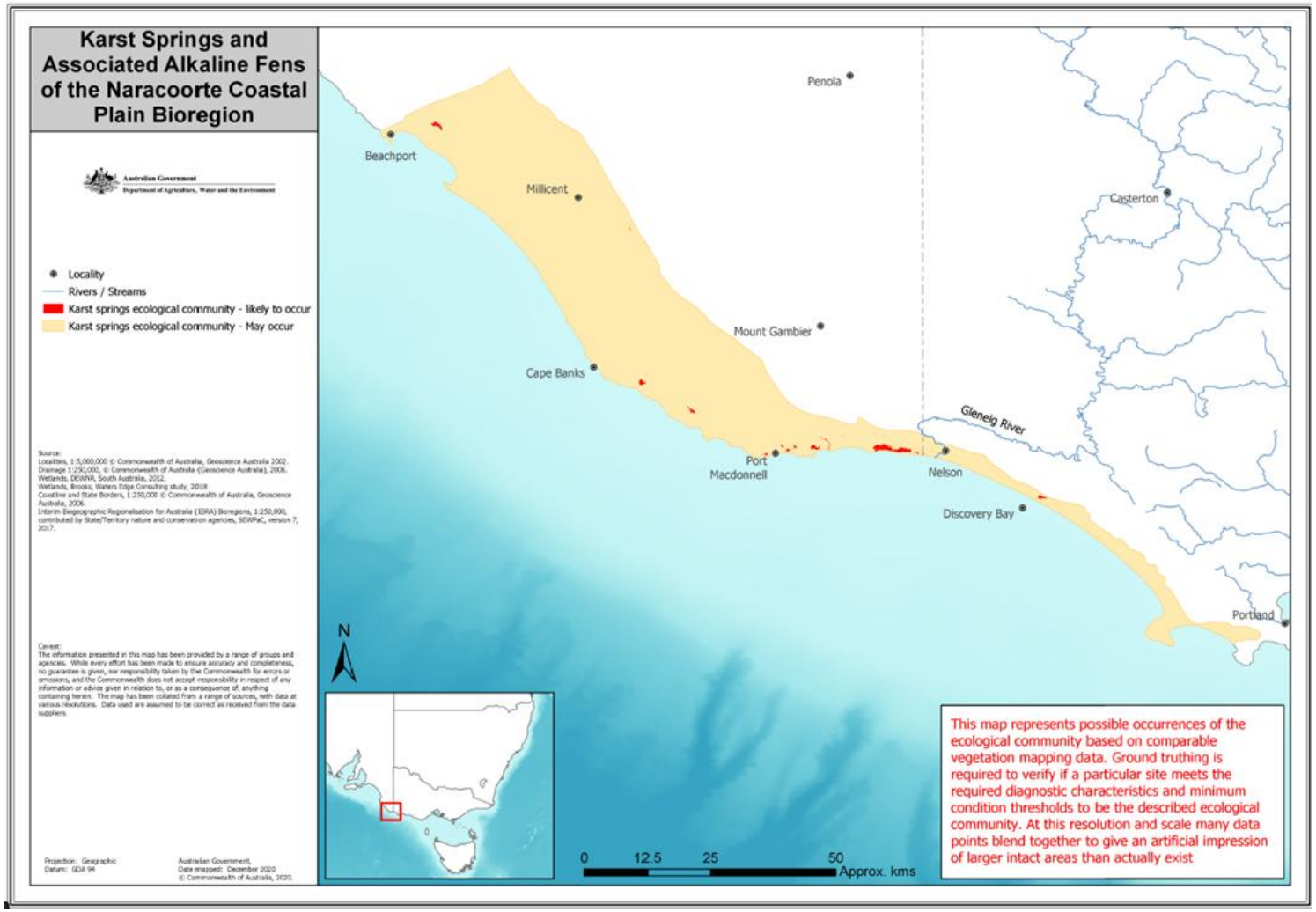

Figure 3-12: Distribution of the TEC Karst Springs and Associated Alkaline Fens of the Naracoorte Coastal Plain Bioregion (Source: DAWE, 2020a)

3.5 Coastal Vine Thickets

3.5.1 TEC: Littoral Rainforest and Coastal Vine Thickets of Eastern Australia

The 'Littoral Rainforest and Coastal Vine Thickets of Eastern Australia' is listed as a critically endangered TEC under the EPBC Act. The ecological community is a complex of rainforest and coastal vine thickets on the east coast of Australia influenced by its proximity to the sea; and provides habitat for over 70 threatened plants and animals and also provides an important buffer to coastal erosion and wind damage (TSSC, 2015a; DEWHA 2009a).

The ecological community occurs within two kilometres of the eastern coastline of Australia, including offshore islands, from Princess Charlotte Bay, Cape York Peninsula to the Gippsland Lakes in Victoria (TSSC, 2015a) (Table 3-7, Figure 3-13). It occurs as a series of naturally disjunct and localised stands, on a range of landforms which have been influenced by coastal processes including dunes and flats, headlands and sea-cliffs (DEWHA, 2009a).

Table 3-7: Presence of Coastal Vine Thickets within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
TEC: Littoral Rainforest and Coastal Vine Thickets of Eastern Australia[1]			✓			✓	✓		

[1] Presence of TEC determined from EPBC Protected Matters search reports.

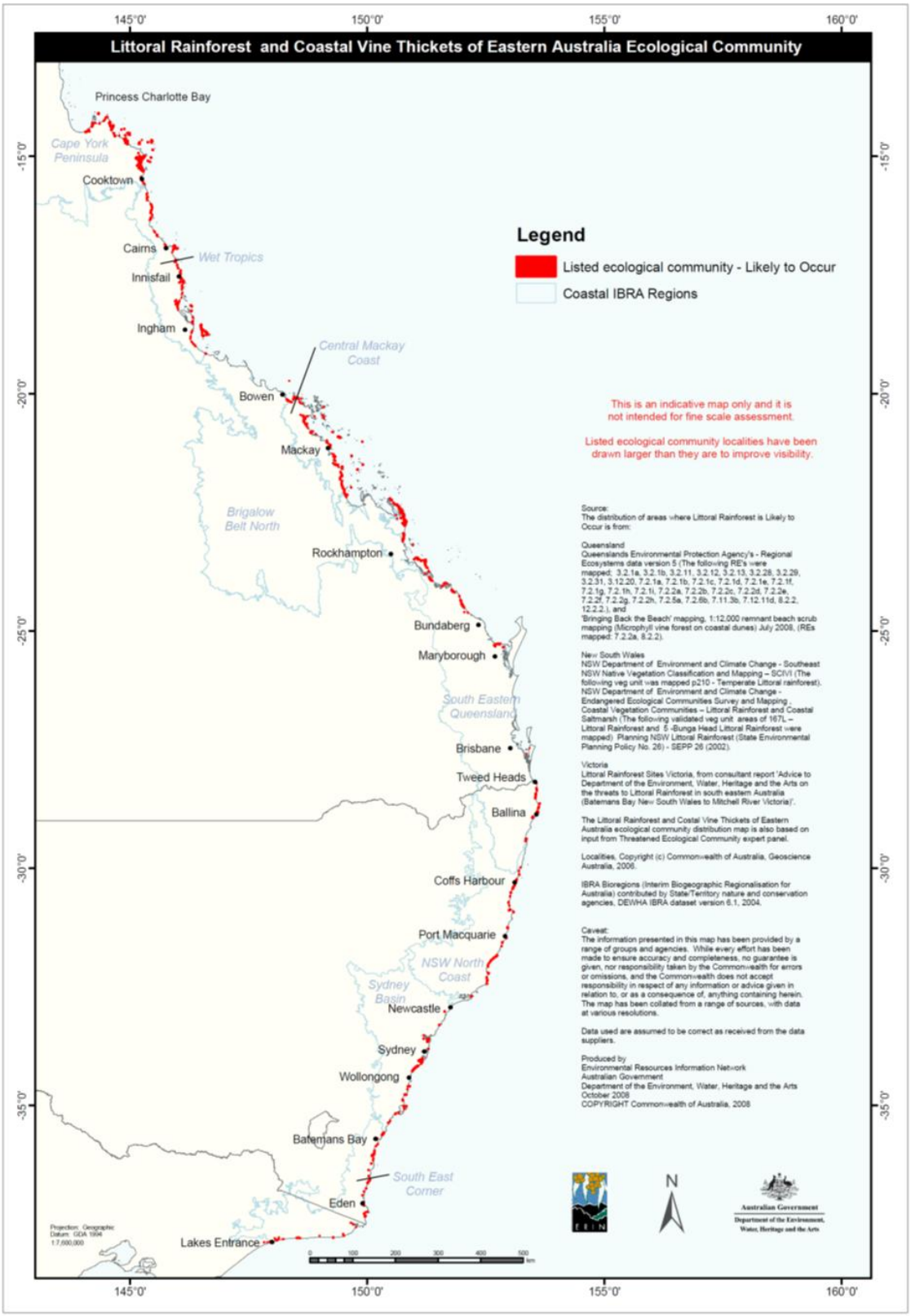

Figure 3-13: Distribution of the TEC Littoral Rainforest and Coastal Vine Thickets of Eastern Australia (Source: DEWHA, 2009a)

3.6 Woodland and Grasslands

3.6.1.1 TEC: Lowland Grassy Woodland in the South East Corner Bioregion

The Lowland Grassy Woodland in the South East Corner Bioregion was listed as critically endangered in 2007 (Figure 3-14). This and is located within the Environmental Sectors (Table 3-8). This TEC once covered fertile rolling hills and coastal river valleys of south-eastern NSW, with strongholds in the Bega, Cobargo and Moruya areas. It occurs on rain shadow landscapes below 500 m elevation, mainly on fertile granite and basalt-derived soils, and now persists only in small remnants on private land, roadsides, and reserves, having been extensively cleared for agriculture and development. The community is typically a grassy woodland or open forest with high species diversity in its ground layer of grasses and forbs, which vary with fire, grazing, and seasonal conditions. It provides critical habitat for a wide range of fauna, including kangaroos, wallabies, possums, gliders, bats, reptiles, and woodland birds, some of which are threatened, such as the scarlet robin, diamond firetail, barking owl, and koala. Despite its fragmentation, the ecological community supports important biodiversity values and plays a vital role in regional connectivity between remnant habitats (DSEWPaC, 2013g).

Table 3-8: Presence of Lowland Grassy Woodland in the South East Corner Bioregion within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
TEC: Lowland Grassy Woodland in the South East Corner Bioregion [1]			✓			✓			

[1] Presence of TEC determined from EPBC Protected Matters search reports.

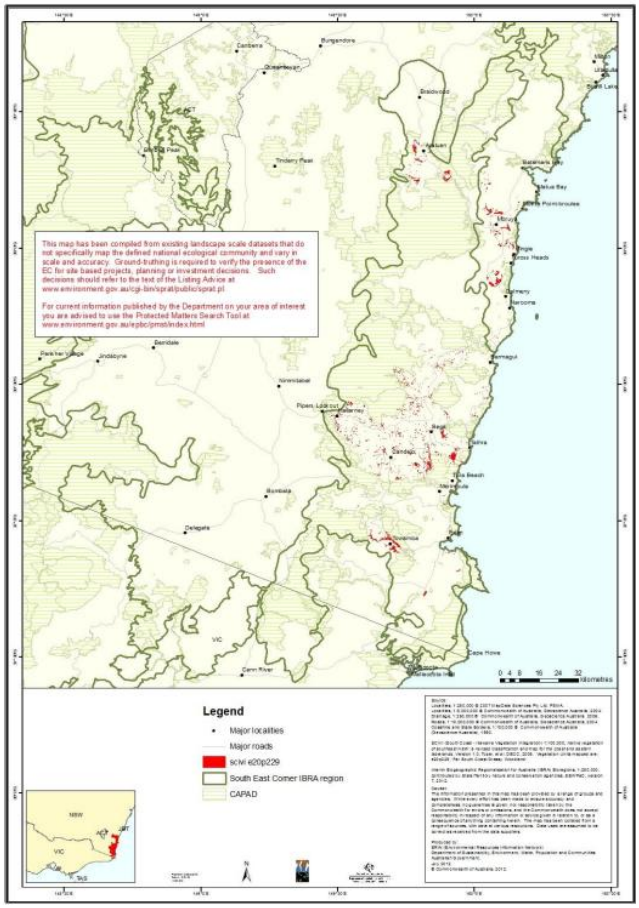

Figure 3-14: Distribution map for the Lowland Grassy Woodland in the South East (Source: DSEWPaC, 2013g).

3.6.1.2 TEC: Natural Damp Grassland of the Victorian Coastal Plains

The Natural Damp Grassland of the Victorian Coastal Plains (Figure 3-15), listed as critically endangered, and is located within the Environmental Sectors (Table 3-9). This TEC is a grassland to open grassy woodland ecosystem restricted to the South East Coastal Plain bioregion of Victoria, mainly within the Gippsland Plain with some remnants on the Otway Plain. It occurs on poorly drained, heavy silty–loamy soils often derived from floodplain or swamp deposits, which are seasonally damp or waterlogged. The community is dominated by tussock grasses, such as *Themeda triandra* (kangaroo grass) on drier sites and *Poa labillardierei* on wetter sites, with a diverse ground layer of graminoids and forbs that varies with season and soil moisture. Scattered trees may occur, typically damp-site eucalypts such as manna gum and swamp gum, alongside non-eucalypt species like drooping she-oak, blackwood, and black wattle, with silver banksia historically prominent. The ecological community provides important habitat for native fauna, including the endangered southern brown bandicoot and vulnerable growling grass frog, and supports biodiversity connectivity with adjacent grassy woodlands and wetlands, despite now being highly fragmented and limited in extent (DoE, 2015f).

Table 3-9: Natural Damp Grassland of the Victorian Coastal Plains within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
TEC: Natural Damp Grassland of the Victorian Coastal plains[1]		✓	✓						

[1] Presence of TEC determined from EPBC Protected Matters search reports.

Figure 3-15: Distribution of Natural Damp Grassland of the Victorian Coastal Plains (This map has been compiled from datasets with a range of scales and quality. Species or ecological community distributions included in this map are only indicative and not meant for local assessment (Source: DoE, 2015f)

3.6.1.3 TEC: River-Flat Eucalypt Forest on Coastal Floodplains of Southern New South Wales And Eastern Victoria

The River-Flat Eucalypt Forest on Coastal Floodplains of Southern New South Wales And Eastern Victoria (Figure 3-16), listed as critically endangered, and is located within the Environmental Sectors (Table 3-10). This TEC occurs on alluvial soils across floodplains, riverbanks, riparian zones, and depressions from Sale in Victoria to north of Newcastle in New South Wales. It typically forms tall open forests to woodlands, sometimes reaching over 40 m in height, with a canopy dominated by multiple eucalypt species and a diverse understorey of small trees, shrubs, vines, grasses, forbs, sedges, and ferns. The community varies in density and structure depending on local rainfall, soil type, and flooding regimes, and often occurs in mosaics with other floodplain forests, wetlands, and lowland woodlands. It provides critical habitat for a wide variety of fauna, including birds, mammals, reptiles, amphibians, and invertebrates, which contribute to pollination, seed dispersal, predator-prey dynamics, and soil processes. Despite its ecological richness and importance, much of this community has been disturbed or cleared, leaving fragmented remnants of high conservation value (DAWE, 2020b).

Table 3-10: River-Flat Eucalypt Forest on Coastal Floodplains of Southern New South Wales And Eastern Victoria within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
TEC: River-Flat Eucalypt Forest on Coastal Floodplains of Southern New South Wales And Eastern Victoria[1]			✓			✓			

[1] Presence of TEC determined from EPBC Protected Matters search reports.

Figure 3-16: Distribution of River-Flat Eucalypt Forest on Coastal Floodplains of Southern New South Wales And Eastern Victoria (This map has been compiled from datasets with a range of scales and quality. Species or ecological community distributions included in this map are only indicative and not meant for local assessment (Source: DAWE, 2020b)

3.6.1.4 TEC: Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)

The Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (*Eucalyptus ovata / E. brookeriana*) (Figure 3-17), listed as critically endangered, and is located within the Environmental Sectors (Table 3-11). This TEC is dominated by black gum (Eucalyptus ovata) or Brookers gum (*E. brookeriana*), a nationally significant ecological community, occur on low-lying damp and poorly draining sites across Tasmania, including river flats, valley bottoms, and moist rocky soils. These forests and woodlands play a vital role in maintaining water quality and quantity, preventing erosion and salinity, supporting healthy soils, and providing habitat for diverse native plants and animals. Structurally ranging from open woodland to forest, they feature understoreys of shrubs, sedges, or grasses, with composition influenced by soil fertility, hydrology, and disturbance history. The community is critical for many species, notably the critically endangered swift parrot, which relies on black gum blossoms as a key nectar source during poor blue gum flowering years and nests in tree hollows within these habitats. In addition to biodiversity values, these forests and woodlands deliver significant ecosystem services, including agricultural support, stock shelter, and

recreation, while their resilience underpins long-term adaptation to climate change and environmental disruption (DEE, 2019).

Table 3-11: Presence of Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana) within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
TEC: Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (*Eucalyptus ovata / E. brookeriana*)[1]	✓	✓		✓	✓				

[1] Presence of TEC determined from EPBC Protected Matters search reports.

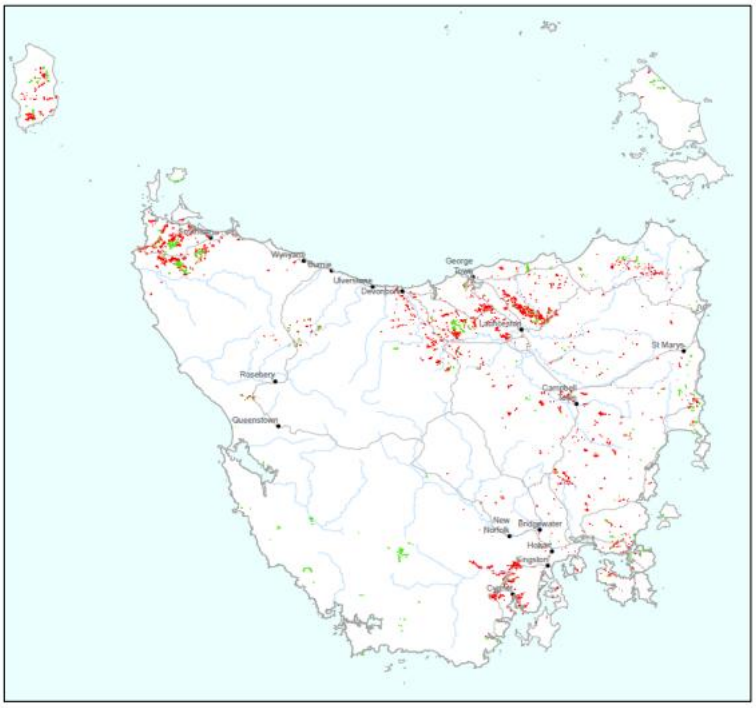

Figure 3-17: Patches of the Black gum – Brookers gum forest/woodland ecological community that are included in conservation tenure (green polygons) or not reserved (red polygons)(Source: DEE, 2019)

3.6.1.5 TEC: Tasmanian White Gum (Eucalyptus viminalis) Wet Forest

The Tasmanian White Gum (*Eucalyptus viminalis*) Wet Forest (Figure 3-18), listed as critically endangered, and is located within the Environmental Sectors (Table 3-12). This TEC features a tall, wet sclerophyll eucalypt forest found mainly in northern and central Tasmania, particularly within the Northern Slopes and Ben Lomond bioregions. It typically occurs on fertile, well-drained soils derived from basalt, alluvium, and other nutrient-rich substrates, in areas with high rainfall and infrequent fire. The canopy is dominated by white gum, often exceeding 60 m in height on fertile

sites, with dense understoreys of broad-leaved shrubs, ferns, graminoids, or, in long unburnt areas, rainforest species. Natural regeneration is disturbance-driven, usually following wildfire, resulting in predominantly even-aged stands. Old-growth examples are now very rare, with most remaining areas consisting of mature regrowth forests (DAWE, 2021b).

This ecological community provides diverse, multi-storied habitat that supports a wide range of fauna, including threatened species such as the Tasmanian wedge-tailed eagle, grey goshawk, giant freshwater crayfish, and the endangered forty-spotted pardalote, which has a strong ecological link with *E. viminalis*. These forests play important roles in nutrient cycling, seed dispersal, and soil turnover, while also holding cultural significance for Indigenous Tasmanians and contemporary value as iconic landscapes. The towering "White Knights" of the Evercreech Regional Reserve, some over 90 m tall, highlight the ecological and cultural importance of this community (DAWE, 2021b).

Table 3-12: Presence of Tasmanian White Gum (Eucalyptus viminalis) Wet Forest within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
TEC: Tasmanian White Gum (*Eucalyptus viminalis*) Wet Forest[1]	✓	✓		✓	✓				

[1] Presence of TEC determined from EPBC Protected Matters search reports.

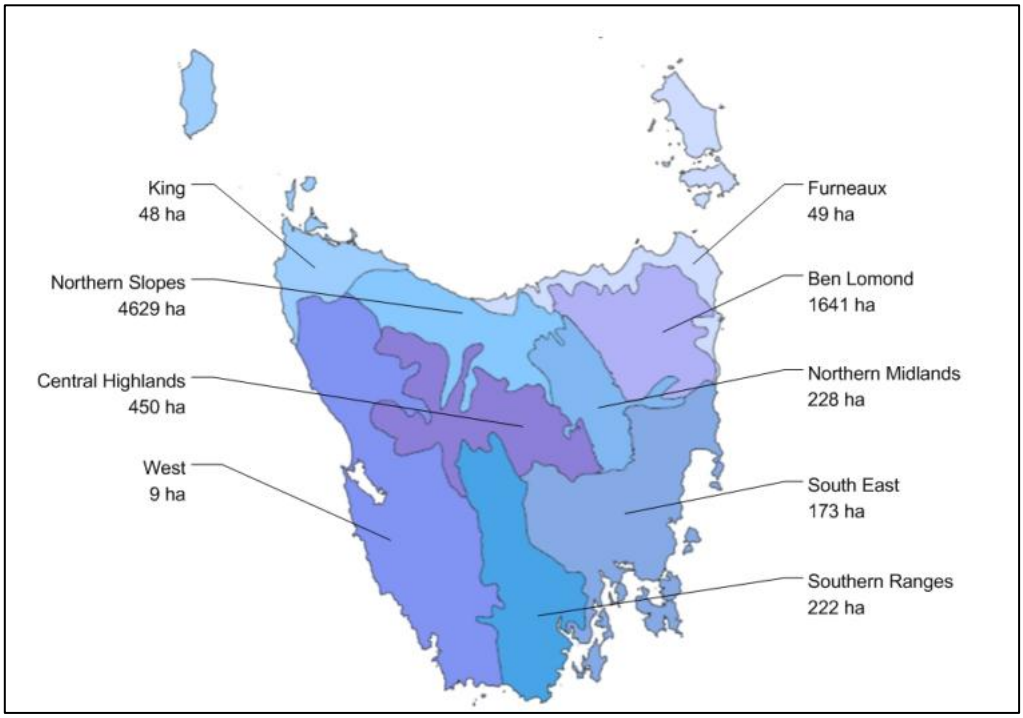

Figure 3-18: Bioregional Distribution of the remaining Tasmanian White Gum (Eucalyptus viminalis) Wet Forest (Source: DAWE, 2021b)

3.7 Soft Sediment

Unvegetated soft sediments are a widespread habitat in both intertidal and subtidal areas, particularly in areas beyond the photic zone. Within the photic zone, this habitat appears more common through southern Australia, than along the Australian east coast (Figure 3-19). The 'Sediment Dominated Habitat' class includes all areas dominated by particles of gravel size or smaller (i.e., including sands and silts) (Figure 3-19) (Mount and Bricher, 2008; OzCoasts 2015b). The biodiversity and productivity of soft sediment habitat varies depending upon depth, light, temperature and the type of sediment present.

The substrate across Bass Strait comprises a variety of sediment types, with sediment particle size associated with tidal currents and wave energy. Near-shore sediments consist of coarse sands with isolated areas of gravels, shells and pebbles; and become progressively finer offshore (Esso, 2009). The inshore seabed of Bass Strait consists of symmetrical, wave-generated sandy ripples, becoming shelly in troughs as the depth increases. Finer, muddy sands occur further offshore in the mid-shelf regions (Esso, 2009).

In the Gippsland Basin, seabed material is predominantly calcium carbonate comprised of calcarenite marls and marine shales (Esso, 2009). The Gippsland Basin is composed of a series of massive sediment flats, interspersed with small patches of reef, bedrock and consolidated sediment, submarine canyons, escarpments and a knoll that juts out from the base of the continental slope (Cooper Energy, 2017). The fine to course sandy plains and areas of shell are only occasionally broken by low ribbons of reef; however, these reefs do not support the large brown seaweeds characteristic of many Victorian reefs but instead are inhabited by resilient red seaweeds and encrusting animals that can survive the sandy environment (Esso, 2009).

A survey undertaken along the Patricia-Baleen pipeline identified four general habitat associations on the seabed (Cooper Energy, 2017):

1. Medium sand and shell grit; extensive areas with pronounced sand waves. Epibiotic was generally sparse to commonly occurring sea pens, occasional sponges and stalked colonial ascidians.
2. Shell accumulations: areas of seabed comprised of old large shells, predominantly bivalves and scallops.
3. Sponge garden; small and distinct area of large sponges and bryozoans at approximately 50 m water depth. Sponges included fans, spheres, massives, cups and fingers. Bryozoans included lace-like corals, concertina fans, perforated rigid sheets and fern-like branches. This suggests that although the seabed is predominantly sand and grit it is stable enough to allow these associations to grow. Sponge gardens attracted schools of jackass morwong, butterfly perch and individual gurnard and leatherjackets.
4. Introduced New Zealand screw shell aggregations; NZ screw shell (*Maoricolpus roseus*) was commonly found at water depths greater than 40 m, sometimes forming dense beds covering 100% of the seabed.

A survey of the Sole pipeline route showed a featureless seabed comprised of clays, silts, sands and gravel, and some consolidated bedded sediments (Cooper Energy, 2018). Extensive demersal fishing in the area may have resulted in modified seabed biota due to trawling and netting activities (CEE, 2003).

In the Otway Basin, seabed surveys were conducted in 2004 to assist the development of the Casino Project (Santos, 2004). The survey identified varying habitats at different depths:

- Shallow environments (2 to 8 m): dominated by sand, patchy sandy reef, and contiguous kelp reef consisting of large areas of hard substrate dominated by large brown algae (bubble weed, *Phyllospora comosa* and bull kelp, *Durvillaea potatorum*).
- Mid-depth environment (8-20 m) is the most extensive and is relatively uniform throughout the region and is dominated by sand.
- Deep environment (20 to 70 m): seabed in this deep environment is characterised by sand or gravelly / rubble and hard platform substrates (Ramboll, 2020).
- Sediment sampling and environmental surveys were conducted to investigate the benthic and epibenthic ecology associated with existing CHN infrastructure in the deep environment (20 – 70m) (Ramboll, 2020). General observations of the survey were that there was very little conspicuous fauna found in the sediment grab samples, which is likely to reflect the relatively course nature of the sediment collected, characteristic of the wider region (Ramboll, 2020).

Scientific surveys have shown that some shallow Victorian sandy environments have the highest levels of animal diversity in the sea ever recorded (Parks Victoria, 2016). For example, in the area around the Ninety Mile Beach Marine National Park in Gippsland more than 600 different marine animal species, many of them very small, have been found within an area of 10 m^2 (Parks Victoria, 2016). Larger animals found in these soft sediment environments in Victoria have included smooth stingray (*Dasyatis brevicaudata*), pipi (*Plebidonax deltoids*), dumpling squid (*Euprymna tasmanica*), common stargazer (*Kathetostoma leave*) and heart urchin (*Echinocardium cordatum*) (Parks Victoria, 2016).

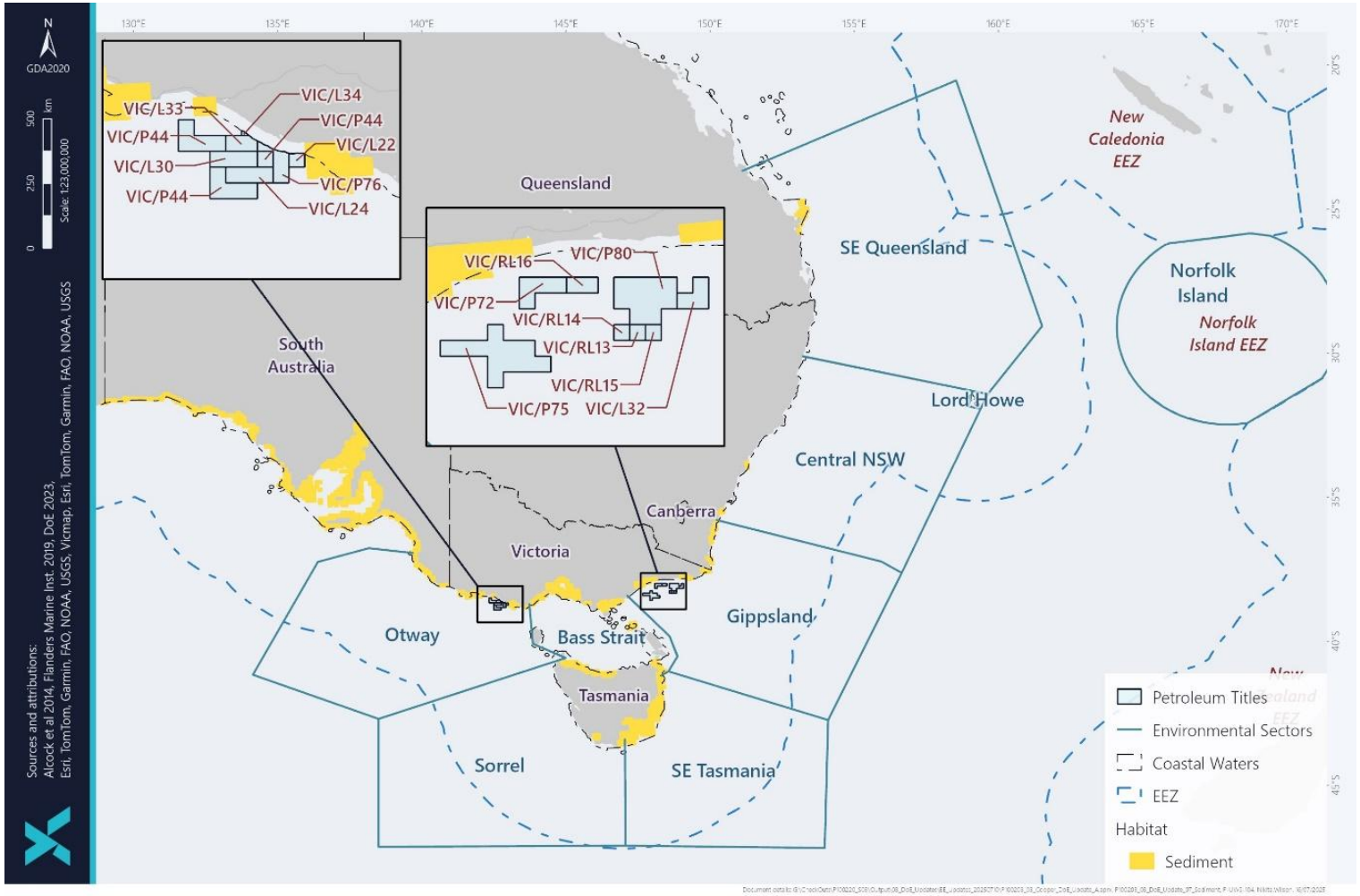

Figure 3-19: Distribution of Sediment Dominated Habitat within the Photic Zone.
Note: Map shows the 'Sediment and Sand Dominated' habitat from the NISB Habitat Classification Scheme.

3.8 Seagrass

Seagrasses are marine flowering plants, with about 30 species found in Australian waters (Huisman, 2000). There is a distinction between tropical and temperate seagrasses, and the approximate latitude for the change occurs at Moreton Bay (southern Queensland, -27° 43' 2.99" S) (Kirkham, 1997). The variation in seagrass species around Australia is shown in Figure 3-20. While seagrass meadows are present throughout southern and eastern Australia (Table 3-13, Figure 3-21), the proportion of seagrass habitat within the south-eastern sector is not high compared to the rest of Australia (in particular with parts of South Australia and Western Australia) (Kirkham, 1997). The mapped 'Seagrass Dominated' habitat class includes areas with greater than 5% coverage of seagrass (Figure 3-21) (Mount and Bricher, 2008; OzCoasts 2015b).

Seagrass generally grows in soft sediments within intertidal and shallow subtidal waters where there is sufficient light and are common in sheltered coastal areas such as bays, lees of islands and fringing coastal reefs (McClatchie et al., 2006; McLeay et al., 2003). Known seagrass meadows within this stretch of coast include Jervis Bay and Botany Bay (New South Wales), Norfolk Bay and Pittwater (south-eastern Tasmania), Corner Inlet, Port Phillip Bay and Western Port Bay (Victoria), and Moreton Bay (Queensland). Seagrass meadows are important in stabilising seabed sediments, and providing nursery grounds for fish and crustaceans, and a protective habitat for the juvenile fish and invertebrates species (Huisman, 2000; Kirkman, 1997).

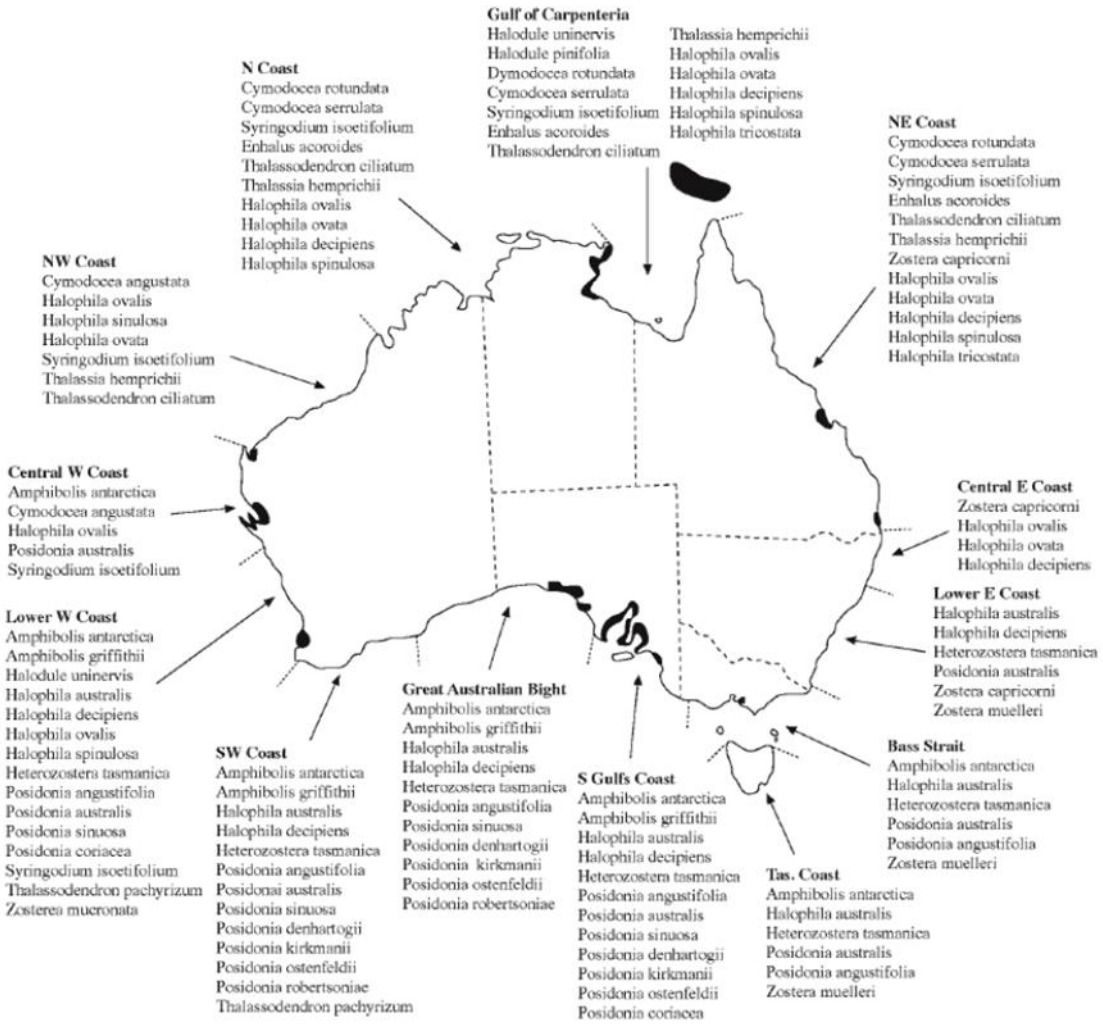

Figure 3-20: Distribution of Seagrass Species along the Australian Coast (Source: Kirkham, 1997)

Table 3-13: Presence of Seagrass within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Seagrass (Dominant Habitat)[1]	✓	✓	✓	✓	✓	✓	✓	✓	
TEC: *Posidonia australis* seagrass meadows of the Manning-Hawkesbury ecoregion[2]						✓			

[1] Seagrass as a dominant intertidal/subtidal habitat determined from national mapping available from OzCoasts (2015b), and local flora reports for Lord Howe Island (NSW DPI, no date).
[2] Presence of TEC determined from EPBC Protected Matters search reports.

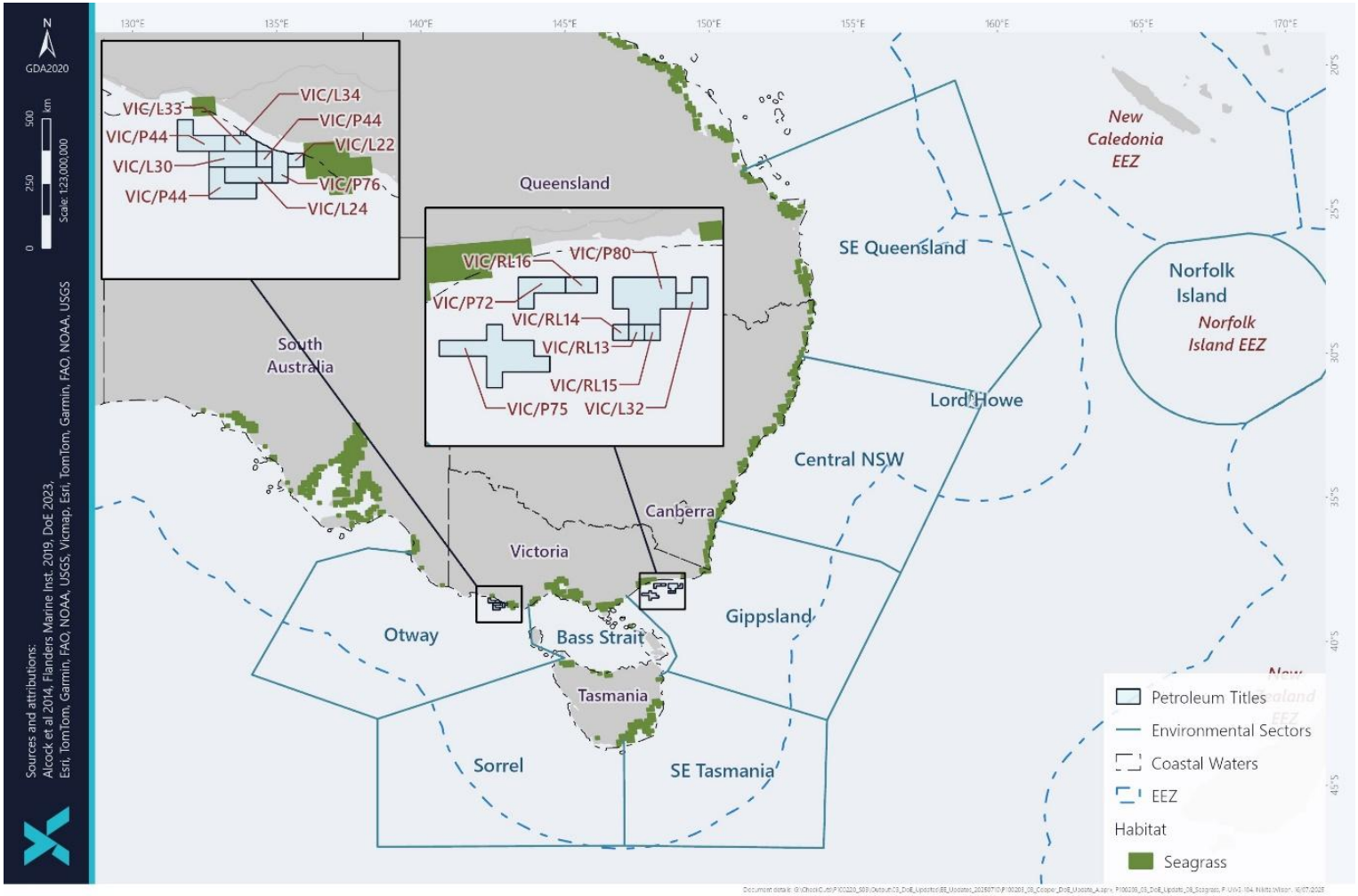

Figure 3-21: Distribution of Seagrass Dominated Habitat within the Photic Zone.
Note: Map shows the 'seagrass dominated' habitat from the NISB Habitat Classification Scheme

3.8.1 TEC: Posidonia Australis Seagrass Meadows of the Manning-Hawkesbury Ecoregion

The '*Posidonia australis* seagrass meadows of the Manning-Hawkesbury ecoregion' is listed as an endangered TEC under the EPBC Act. The ecological community is the assemblage of plants, animals and micro-organisms associated with seagrass meadows (dominated by *Posidonia australis*) that occurs within the warm temperate Manning Shelf and Hawkesbury Shelf bioregions (TSSC, 2018). The ecological community occurs mostly within the sheltered environments of permanently open estuaries along the New South Wales coast; and is known to occur at Wallis Lake, Port Stephens, Lake Macquarie, Brisbane Water, Hawkesbury River, Pittwater, Port Jackson (Sydney Harbour), Botany Bay, Port Hacking, and Broughton Island (Table 3-13, Figure 3-22) (TSSC, 2018).

The ecological community provides important ecosystem functions (TSSC, 2018), including:

- Provide habitat for a diverse range of plants and animals including nursery habitat for many important fish and invertebrate species (including commercially harvested species).
- Support estuarine food webs by providing a surface for the establishment of epiphytes, epifauna and infauna which provide an important food and detrital resource for larger invertebrates, fish and other foraging fauna.
- Stabilise sediments and prevent erosion of nearshore areas by mitigating currents and reducing wave energy.
- Protect water quality and sequester carbon.

The key threats affecting the ecological community have been identified as: coastal development, invasive species, dredging, boat mooring (and other boat related activities), catchment disturbance and pollution, fishing and climate change (TSSC, 2018).

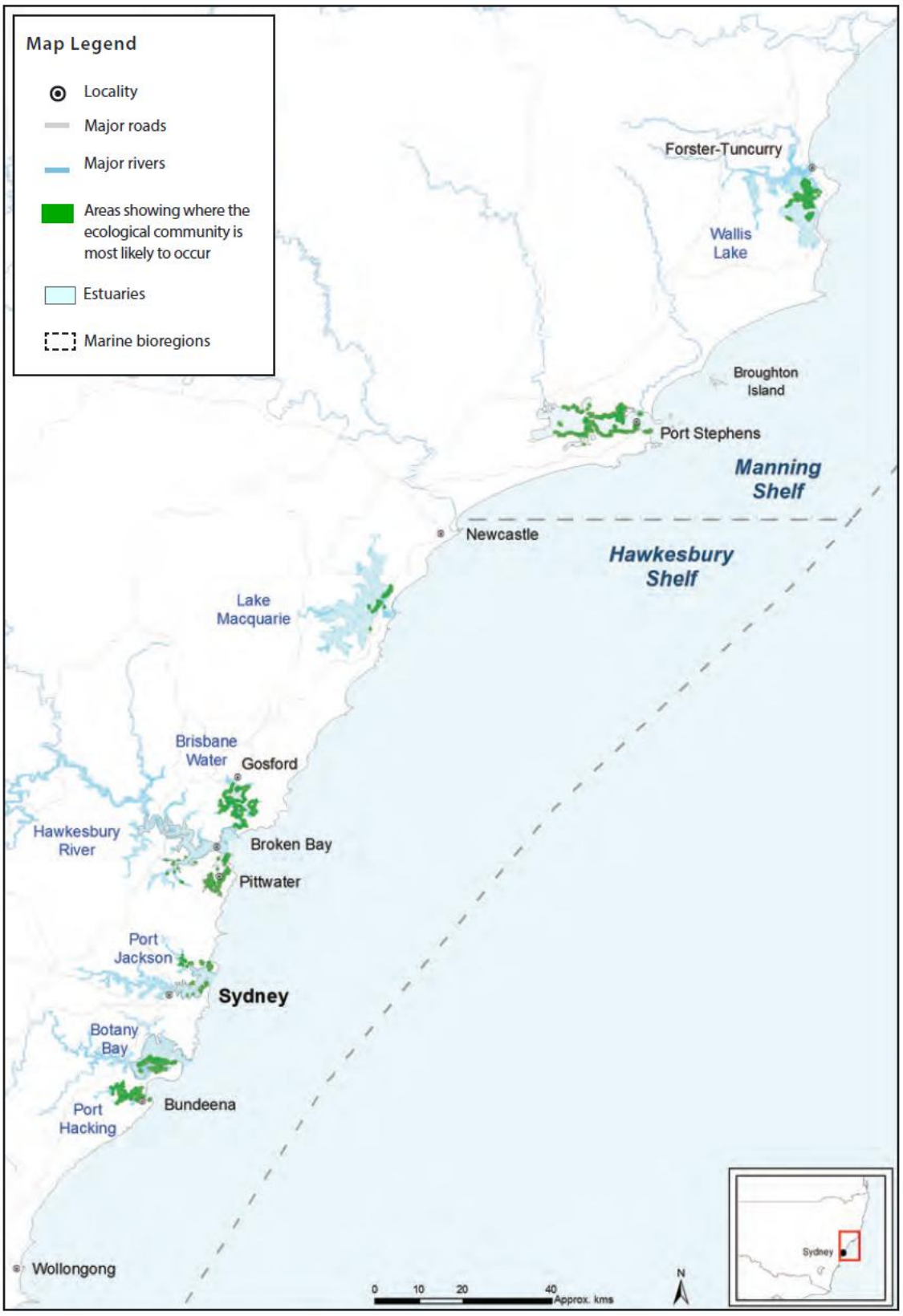

Figure 3-22: Distribution of the TEC Posidonia australis Seagrass Meadows of the Manning-Hawkesbury Ecoregion (Source: TSSC, 2018)

3.9 Algae

3.9.1 Microalgae

Benthic microalgae are ubiquitous in aquatic areas where sunlight reaches the sediment surface. Benthic microalgae are often much more highly concentrated in the surficial sediment layer in comparison to the concentration of planktonic microalgae (i.e. phytoplankton) in water (Ansell et al., 1999). Benthic microalgae can assist with the exchange of nutrients across the sediment-water interface; and in sediment stabilisation due to the secretion of extracellular polymetric substances (Ansell et al., 1999). Benthic microalgae can also provide a food source to grazers such as gastropod and amphipods (Ansell et al., 1999).

3.9.2 Macroalgae

Macroalgae communities are generally found on intertidal and shallow subtidal rocky substrates and can occur throughout the Australian coast (Table 3-14). Macroalgal systems are an important source of food and shelter for many ocean species; including in their unattached drift or wrack forms (McClatchie et al., 2006). Macroalgae are divided into three groups: Phaeophyceae (brown algae), Rhodophyta (red algae), and Chlorophyta (green algae). Brown algae are typically the most visually dominant and form canopy layers (McClatchie et al., 2006). The principal physical factors affecting the presence and growth of macroalgae include temperature, nutrients, water motion, light, salinity, substratum, sedimentation and pollution (Sanderson, 1997). Macroalgae assemblages vary, but *Ecklonia radiata* and *Sargassum sp.* can be found in waters up to 45 m depth (Pocklington, 2011). Known areas of macroalgae communities within this stretch of coast include Port Philip Bay (Victoria; Figure 3-23), D'Entrecastuaux Channel and George III Reef (Tasmania), and Jervis and Botany Bays (New South Wales).

Table 3-14: Presence of Macroalgae within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Macroalgae (Dominant Habitat)[1]	✓	✓	✓	✓	✓	✓	✓	✓	
TEC: Giant Kelp Marine Forests of South East Australia[2]	✓	✓	✓	✓	✓				

[1] Macroalgae as a dominant intertidal/subtidal habitat determined from national mapping available from OzCoasts (2015b), and management plans for Lord Howe Island (Commonwealth of Australia, 2002).
[2] Presence of TEC determined from EPBC Protected Matters search reports.

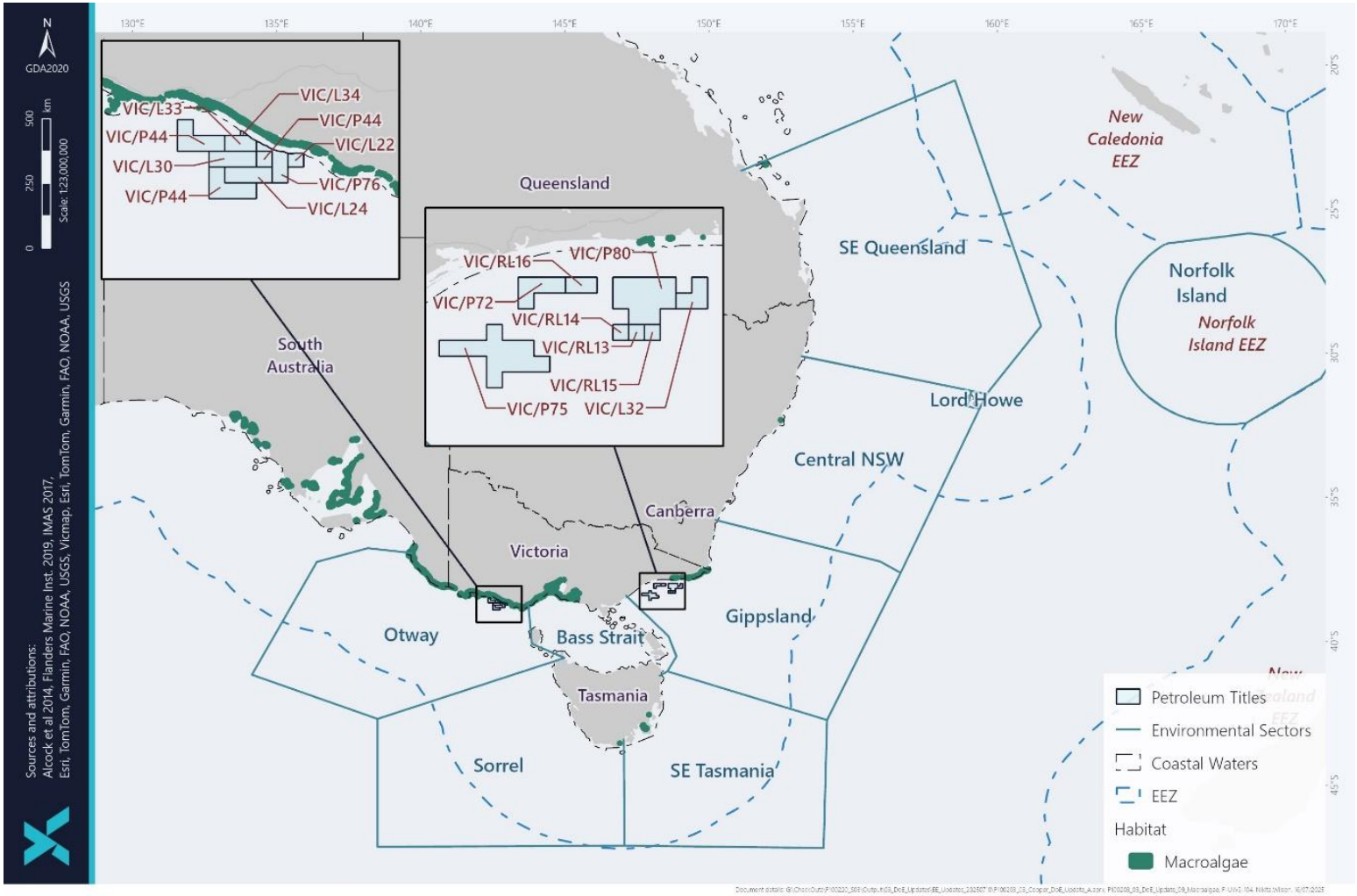

Figure 3-23: Distribution of Macroalgae Dominated Nearshore Habitat within the Photic Zone.
Note: Map shows the 'macroalgae dominated' habitat from the NISB Habitat Classification Scheme.

3.9.3 TEC: Giant Kelp Marine Forests of South East Australia

The 'Giant Kelp Marine Forests of South East Australia' is listed as an endangered TEC under the EPBC Act and is known to occur within southern Australia (Table 3-14). The ecological community is characterised by a closed to semi-closed surface or subsurface canopy of *Macrocystis pyrifera*, and extends between the ocean floor and ocean surface, exhibiting a 'forest-like' structure with a diverse range of organisms occupying its benthic, pelagic and upper-canopy layers (TSSC, 2012a). Giant kelp is a large brown alga that grows on rocky reefs from the seafloor 8 m below sea level and deeper. Its fronds grow vertically toward the water surface, in cold temperate waters off southeast Australia. *M. pyrifera* is the only species of kelp to provide this three-dimensional structure from the sea floor to the sea surface (TSSC, 2012a). This ecological community occurs on rocky substrate along the east and south coastlines of Tasmania; some patches may also occur in the coastal waters of western and northern Tasmania, south eastern South Australia, and Victoria (Figure 3-24) (TSSC, 2012a).

The high primary and secondary productivity of the giant kelp forests create and provide a number of ecosystem services to the local environment including settlement habitat for juvenile life stages of commercially important fisheries, improvements in local water quality conditions and coastal protection via buffering strong wave conditions from reaching the shore (TSSC, 2012a).

The key threats affecting the ecological community include increasing sea surface temperatures, changes in nutrient availability in warmer waters, changes in weather patterns and large-scale oceanographic conditions, and associated range expansion of invasive species (TSSC, 2012a). Other threats include impacts on water quality from land-based activities and aquaculture and potential loss from catastrophic storm events (TSSC, 2012a).

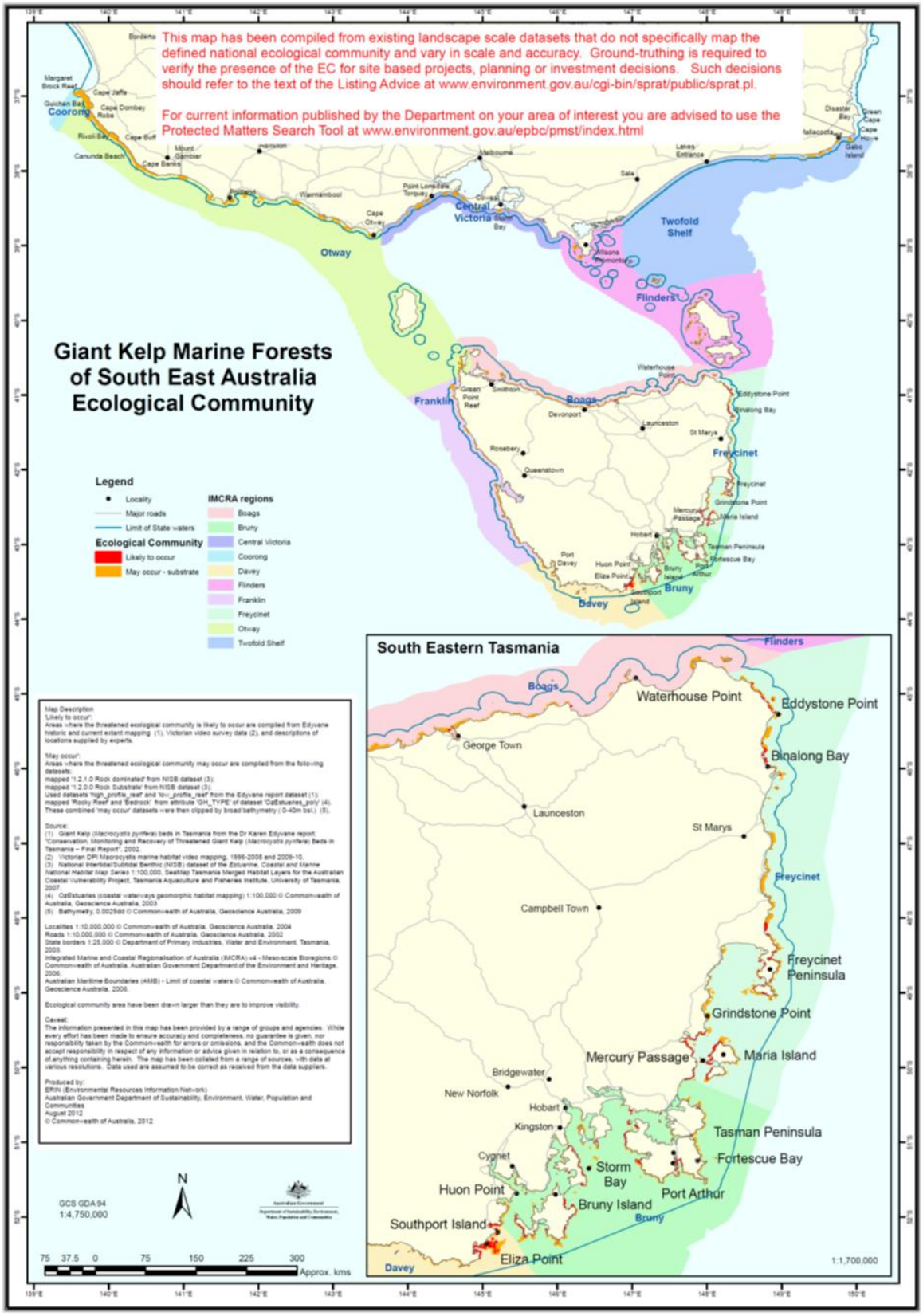

Figure 3-24: Distribution of the TEC Giant Kelp Marine Forests of South East Australia (Source: TSSC, 2012a)

3.10 Coral

Corals are generally divided into two broad groups: the zooxanthellate ('reef-building', 'hermatypic' or 'hard') corals, which contain symbiotic microalgae (zooxanthellae) that enhance growth and allow the coral to secrete large amounts of calcium carbonate; and the azooxanthellate ('ahermatypic' or 'soft') corals, which are generally smaller and often solitary (Tzioumis and Keable, 2007). Hard corals are generally found in shallower (<50 m) waters while the soft corals are found at most depths, particularly those below 50 m (Tzioumis and Keable, 2007).

Corals may only occur as the dominant habitat type in Queensland (Table 3-15, Figure 3-25), however their presence has been recorded throughout the Temperate East Marine Region (Figure 3-26), and further south into the South-east Marine Region (e.g. Kent Group Marine Protected Area near Flinders Island; Freycinet Commonwealth Marine Park, eastern Tasmania; Wilsons Promontory National Park and Cape Otway, Victoria). The southern limit of reef development is seen at Lord Howe Island; however, many hard-coral species are present in non-reef environments in coastal areas such as Moreton Bay (Queensland) and the Solitary Islands (New South Wales) (Tzioumis and Keable, 2007). Soft corals are typically present in deeper waters throughout the continental shelf, slope and offslope regions, to well below the limit of light penetration.

There are three factors that appear to drive the spawning of warm water corals – a gradual rise in sea temperature (this triggers the gametes to mature), the lunar cycle, and the diurnal light cycle. As such, the timing of coral spawning events varies around Australia. Large spawning events for Great Barrier Reef corals typically occur four to five days after the full moon in October or November (and occasionally into December). Reproduction methods for cold water corals are not as well understood, but it is likely that some are still broadcast spawners (like their tropical counterparts), while others brood and release formed larvae (Roberts et al., 2009).

Table 3-15: Presence of Coral within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Coral (Dominant Habitat)[1]							✓	✓	
Coral (Presence)[2]	✓	✓	✓	✓	✓	✓	✓	✓	✓

[1] Coral as a dominant intertidal/subtidal habitat determined from national mapping available from OzCoasts (2015b), and management plans for Lord Howe Island (Commonwealth of Australia, 2002).
[2] Coral where a record exists for any coral presence.

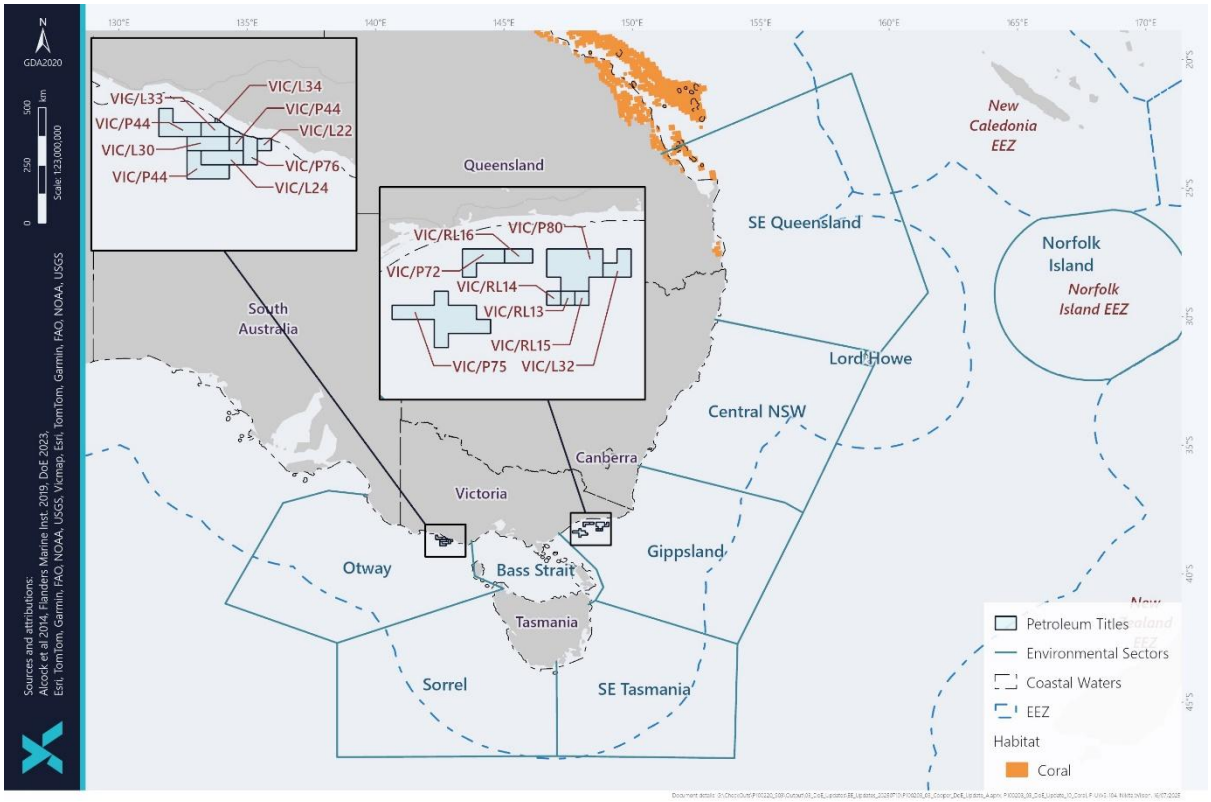

Figure 3-25: Distribution of Coral Dominated Habitat within the Photic Zone.
Note: Map shows the 'Coral Dominated' habitat from the NISB Habitat Classification Scheme.

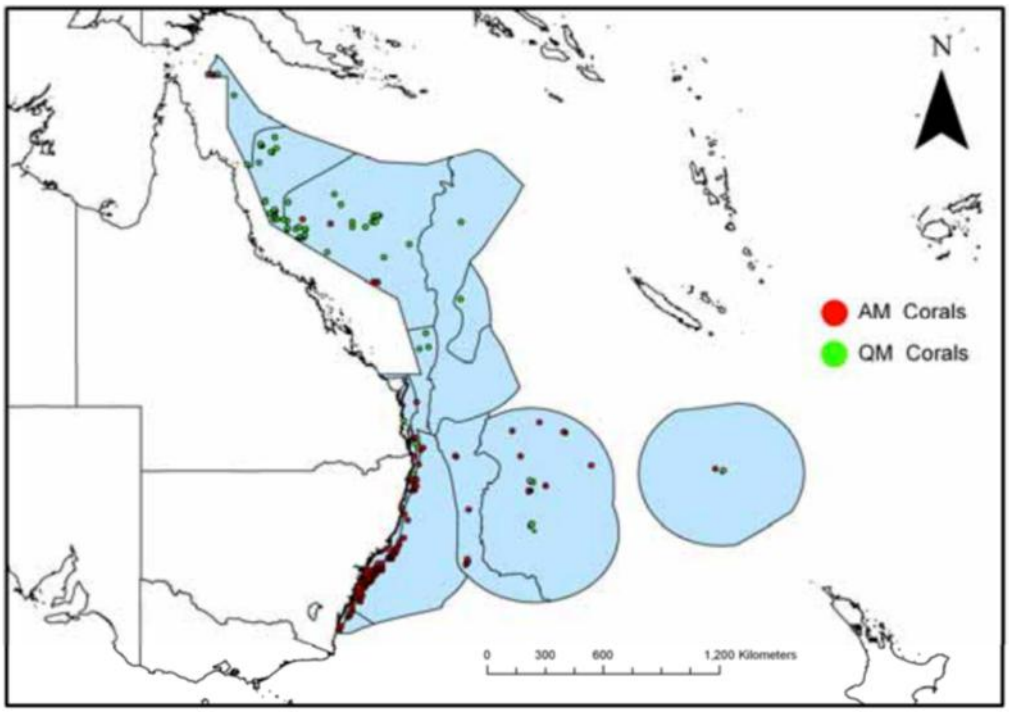

Figure 3-26: Hard Coral Records for the Temperate East Marine Region based on Queensland (QM) and Australian (AM) Museum datasets (Source: Tzioumis and Keable, 2007)

3.11 Plankton

Plankton species, including both phytoplankton and zooplankton, are a key component in oceanic food chains.

Phytoplankton are autotrophic planktonic organisms living within the photic zone; and are the start of the food chain in the ocean (McClatchie et al., 2006). Phytoplankton communities are largely comprised of protists, including green algae, diatoms, and dinoflagellates (McClatchie et al., 2006). There are three size classes of phytoplankton: microplankton (20-200 µm), nanoplankton (2-20 µm) and picoplankton (0.2-2 µm). Diatoms and dinoflagellates are the most abundant of the micro and nanoplankton size classes and are generally responsible for the majority of oceanic primary production (McClatchie et al., 2006).

Phytoplankton are dependent on oceanographic processes (e.g. currents and vertical mixing), that supply nutrients needed for photosynthesis. Thus, phytoplankton biomass is typically variable (spatially and temporally), but greatest in areas of upwelling, or in shallow waters where nutrient levels are high. Notable areas of upwelling within the Environmental Sectors include the Bonney Coast upwelling (Otway) and the upwelling East of Eden (Gippsland). Gill et al., (2011) describes the Bonney Coast Upwelling (refer Section 4.6) as generally starting in the eastern part of the Great Australian Bight and spreading eastwards to the Otway Basin. At the height of the Bonney upwelling, during February and March, its area of influence often exceeds 12,000 km^2, while its sea surface temperature often exceeds 1°C, and the chlorophyll-a concentrations are often >1.5x adjacent areas (Huang and Wang, 2019). Seasonal variation in phytoplankton (via chlorophyll-a concentrations) has been demonstrated in Australian waters from the analysis for MODIS-Aqua sensor imagery (Figure 3-27).

Data collected by the Integrated Marine Observing System (IMOS) (Davies et al. 2022) includes biomass and diversity of phytoplankton in the different oceanic regions that surround Australia. This data indicates highest seasonal abundance of phytoplankton within the cooler waters of the Southern Ocean, followed by south-east and eastern zones whereas diversity of phytoplankton is greatest in the warmer Coral Sea. In addition, data indicated that the highest abundance of copepods is found in the Southern Ocean and south-east regions, with diversity highest in the Temperate east and Coral Sea, depending on time of year. The make-up of plankton, their distribution and abundance are also highly variable within the region.

Zooplankton is the faunal component of plankton, comprised of small protozoa, crustaceans (e.g. krill) and the eggs and larvae from larger animals. 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, but it has been found that seven dominant species make up 80% of individuals (Esso, 2009). Copepods make up approximately half of the species encountered (Watson and Chaloupka, 1982).

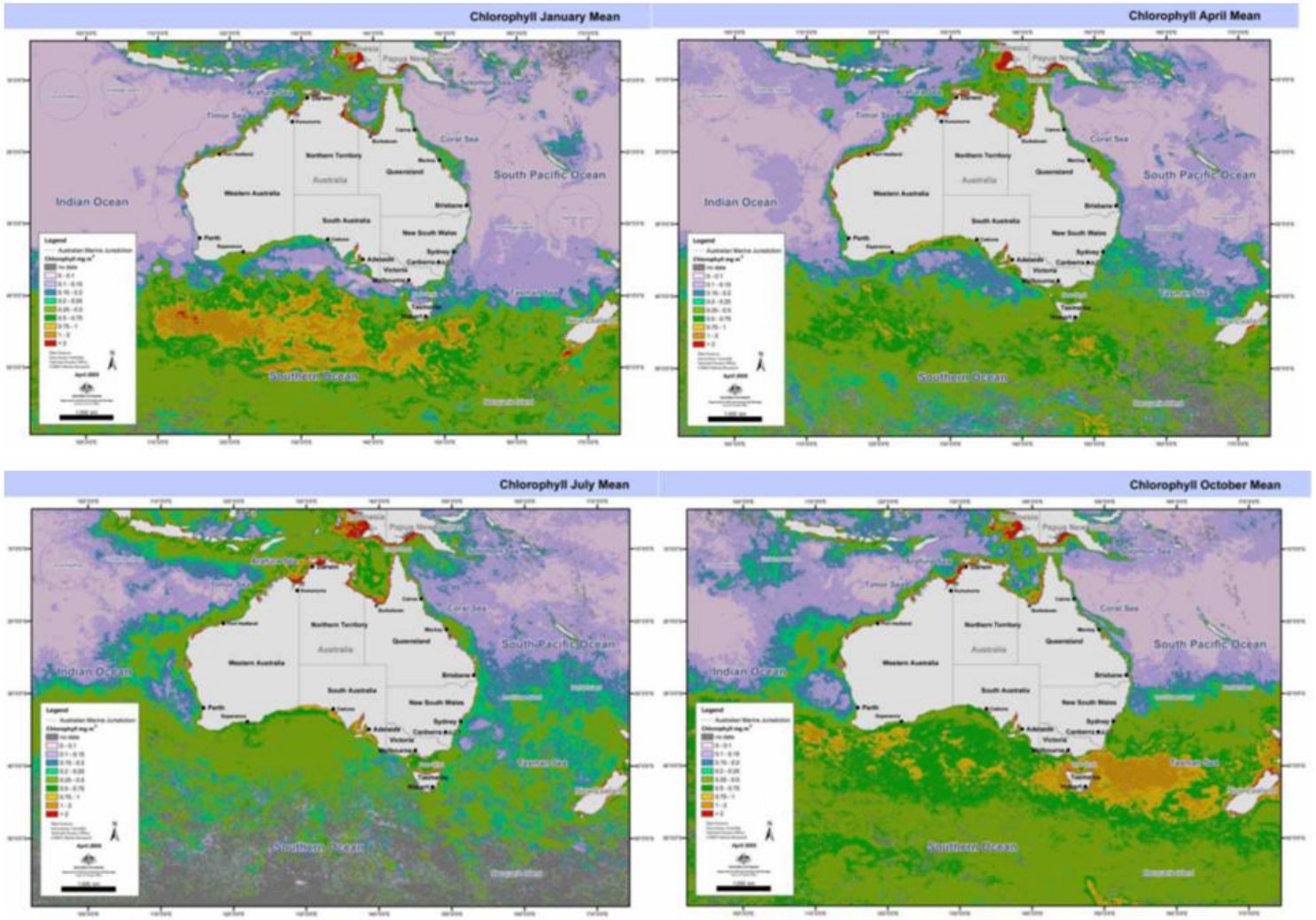

Figure 3-27: Monthly Composites of MODIS Ocean Colour Data showing Seasonal Phytoplankton Growth

3.12 Seabirds and Shorebirds

There are 164 seabird and shorebird species (or species habitat) that may occur within the Environmental Sectors; this includes 130 species classified as threatened and migratory (Table 3-16), dated August 2025. A list of the relevant conservation advice and/or recovery plans is also provided in Table 3-16, with relevant management actions in Table 3-17. The type of presence varies between species and location, and includes important behaviours (e.g. foraging, roosting, breeding) and multiple type of presence for some species (Table 3-16).

There is also a listed critical habitat for the shy albatross (*Thalassarche cauta*) present on islands off the coast of Tasmania (Table 3-16), this is further described in Section 3.12.1.

An additional 33 bird species identified in the PMST Reports are listed terrestrial (brown treecreeper (south-eastern), regent honeyeater, southern whiteface, King Island brown thornbill, King Island scrubtit, gang-gang cockatoo, south-eastern red-tailed black-cockatoo, south-eastern glossy black-cockatoo, diamond firetail, pilotbird, green rosella (King Island), plains-wanderer, south-eastern hooded robin, malleefowl, painted honeyeater, grey falcon, eastern bristlebird, Tasmanian azure kingfisher, Lord Howe woodhen, rufous scrub-bird, black-eared cuckoo, Norfolk Island green parrot, Coxen's Fig-Parrot, squatter pigeon (southern), black currawong (King Island), Lord Howe Island currawong, star finch (eastern), Norfolk Island boobook, golden whistler (Norfolk Island), forty-spotted pardalote, Norfolk Island robin, black-breasted button-quail and the masked owl (Tasmanian)). These species were identified within the PMST search due to the PMST search tool applying a nominal buffer in the search. However, these species inhabit terrestrial environments outside of the Environmental Sectors and have not been considered further.

Many different species of seabirds and shorebirds utilise the Bass Strait and Otway regions and may potentially fly over the Environmental Sectors using the East Asian-Australasian Flyway (EAAF). Globally, the EAAF is one of the most significant migratory bird routes, spanning over 13,000km from Arctic Russia and Alaska, through East and Southeast Asia, to Australia and New Zealand. The flyway spans 22 countries, including key nations such as China, Japan, South Korea, Indonesia, the Philippines, Papua New Guinea, and New Zealand, and supports the annual movements of over 50 million migratory waterbirds (DEE, 2017y; Hansen et al., 2016). The Bass Strait represents a small segment of this expansive flyway, typically used by birds migrating between Tasmania and mainland Australia. Despite its minor geographic role in the broader flyway, the region is ecologically important, providing critical stopover and feeding habitats for several migratory species (DEE, 2017y). There are currently 900 sites recognised as internationally important to migratory waterbirds along the flyway.

3.12.1 Albatross

There are 16 listed species of albatross that may occur within the Environmental Sectors, and all except one (Sooty Albatross) has been identified as using the area for foraging (Table 3-16). Albatross species exhibit a broad range of diets and foraging behaviours; this combined with their ability to cover vast oceanic distances, means all waters within Australian jurisdiction can be considered foraging habitat for this species (DCCEEW, 2022a). The most critical foraging habitat is considered to be in waters south of 25°S where most species spend the majority of their foraging time (DCCEEW, 2022a).

Albatross species typically forage during the day and are less active at night as their ability to see and capture prey from the air is reduced, meaning they are less likely to be impacted by artificial light (Phalan et al., 2007). Albatross's typically feed offshore, mainly along the edge of the continental

shelf and over open waters, where they catch fish and cephalopods (e.g. squid, cuttlefish) by diving into the water (DSEWPaC, 2012a). A BIA for foraging, has been identified for the following albatross species: antipodean, wandering, Buller's, shy, campbell, black-browed, Indian yellow-nosed and white-capped (Figure 3-28 and Figure 3-29).

The **Shy Albatross** is the only albatross endemic to Australia. The Shy Albatross breeds annually over an 8-month period between September and April on 3 islands located off the coast of Tasmania; Albatross Island located in the western Bass Strait, Mewstone and Pedra Branca located in the southern Bass Strait (ACAP, 2023). These islands are listed as Critical Habitat for the shy albatross. Individuals can be found at the colonies year-round exhibiting high site fidelity (TSSC, 2020). Adult individuals predominantly occur in waters adjacent to Tasmanian and southern Australia, while juveniles range extends across the Indian Ocean to southern Africa and potentially the south-western Atlantic Ocean (TSSC, 2020). This species feeds by surface seizing, however they have been observed to dive for prey and can swim down to 7 m (ACAP, 2023).

3.12.2 Petrels

There are 14 species of petrel that may occur within the Environmental Sectors, with most either foraging and/or breeding within the area (Table 3-16). Similar to albatrosses, the petrels have a diverse foraging range, and all waters within Australian jurisdiction can be considered foraging habitat for this species (DCCEEW, 2022a). Petrel species occurring in Australia's jurisdiction predominantly breed on remote, offshore islands in the higher latitudes. Petrels are extremely site faithful. Typical diet for petrels includes cephalopods (e.g. squid) and fish, and prey is predominately caught by surface-seizing (DSEWPaC, 2011). Petrels are mostly surface capturing, pelagic predators that feed on live and dying prey. Their ability to dive varies across species and involves either surface plunge dives or shallow dives to catch prey (generally aggregate in larger numbers where there is a rich food source. They prefer to feed during the day or at night (often by moonlight) (DCCEEW, 2022a).

BIAs, for foraging and breeding, have been identified for the following species: white-bellied storm-petrel, white-faced storm petrel, common diving-petrel, and the Gould's, soft-plumaged, black-winged, providence and kermadec petrels (Figure 3-30, Figure 3-31, and Figure 3-32)). BIAs for foraging have also been established for the northern and southern giant petrel and the great-winged petrel (Figure 3-30 and Figure 3-31).

Petrels are considered to mainly be nocturnal at their breeding places making them susceptible to light emissions when they commute from their onshore colonies to the sea (Chevillion et al., 2022). One of the most critical phases in the life of petrels occurs during fledging (Rodríguez et al., 2017). Fledging is the juvenile's first flight from colony to sea which typically occurs within the first two hours after sunset during the fledging period (Gineste, 2016 cited in Chevillion et al., 2022). Survival rates during the first few weeks as a fledging are the lowest as there is no parental care and young petrels will need to learn how to fly, search and capture food, and maintain plumage alone (Menkhorst, 2010). This biologically sensitive period can be impacted by light and can cause fledgling grounding or fallout events, sometimes leading to mortality (Atchoi et al., 2024).

The **white-bellied storm petrel, black-winged, kermadec** and providence petrel all breed within the Lord Howe and/or Norfolk Island groups. Breeding season is typically October through to May, with the exception of the Providence petrel that breeds during winter. Nesting is usually in burrows, or in sheltered rocky crevices (DECC, 2007; DEE 2017a; DEE 2017b; DEE 2017c; Hutton and Priddel, 2002).

Gould's petrel is Australia's rarest endemic seabird. Breeding for Gould's petrel is restricted to Cabbage Tree Island, located offshore from Port Stephens, New South Wales (NSW DEC, 2006).

Gould's Petrels begin to arrive on Cabbage Tree Island to breed from mid to late September; egg laying takes place over a six-week period commencing in early November (NSW DEC, 2006).

In Australian waters, the **soft-plumaged petrel** breeds at two sites: Maatsuyker Island (off Tasmania) (Figure 3-31) and Macquarie Island (TSSC, 2015c). The main factor causing the species to be listed as vulnerable is its small breeding population size – only seven breeding pairs are known to have occurred on Maatsuyker Island (TSSC, 2015c).

Both the **common diving-petrel** and the **white-faced storm petrel** are not listed as threatened species under the EPBC Act, and have large populations within Australia, accounting for 5% and 25% respectively of the global population (DoE, 2015a). The common diving-petrel breeds on islands off south-east Australia and Tasmania; there are 30 sites with significant breeding colonies (defined as more than 1,000 breeding pairs) known in Tasmania, and 12 sites in Victoria (including Seal Island, Wilson's Promontory and Deen Maar (DoE, 2015a). There are 15 sites with significant breeding colonies in Tasmania, and three sites with Victoria, for the White-faced Storm Petrel (DoE, 2015a).

The **Wilson's storm petrel** is one of the most abundant seabirds and has an extremely large range, however it is most often seen over the continental shelf (DoE, 2025). This species breeds in Antarctic waters and undergoes a trans-equatorial migration, where most individuals spend the non-breeding season in the north Atlantic and north Indian Oceans (Commonwealth of Australia, 2020). During migrations individuals will typically stay far out at sea.

3.12.3 Shearwaters

The shearwaters represent the most abundant seabird in Australia. There are six species of shearwater that may occur within the Environmental Sectors, and all but one (Streaked Shearwater) have been identified as using the area for foraging and breeding (Table 3-16). BIAs, for foraging and breeding, have been identified for the following other five species: Little, Flesh-footed, Sooty, Wedge-tailed, and Short-tailed shearwaters (Figure 3-33 and Figure 3-34).

Shearwaters are medium-size long-winged seabirds that are most common in temperate and cold waters. They spend most of their time foraging in the ocean and return to coastal cliffs and offshore islands only to breed. Shearwaters feed on fish, squid, cephalopod molluscs (squid, cuttlefish, nautilus and argonauts), crustaceans (barnacles and shrimp) and other soft-bodied pelagic prey (CoA, 2020). Food is usually taken by pursuit-plunging, surface plunging or surface-seizing . Some shearwaters, such as the sooty and flesh-footed, are trans-equatorial migrants and are widely distributed across the Pacific Ocean (CoA, 2020).

Shearwaters are typically pelagic species, except during breeding seasons where they are found on remote islands or coastal headlands. Shearwaters are considered to mainly be nocturnal at their breeding places making them highly sensitive to light when they commute from their colonies to the sea (Chevillion et al., 2022). The fledgling phase for shearwaters is also considered a critical phase (Rodriquez et al., 2017). The fledging season may vary between species; however it is known to occur over a short period of time and the first flight typically occurs within the first two hours after sunset (Gineste, 2016 cited in Chevillion et al., 2022). For example, it is widely accepted that the fledging period of the short-tailed shearwater occurs between the third week of April and the first week of May each year (Skira, 1991; Rodríguez et al., 2014; Price, 2022). Known breeding locations include:

- Lord Howe Island group (flesh-footed shearwater, wedge-tailed shearwater, little shearwater).

- Queensland oceanic islands (e.g. Capricorn Group, Mudjimba Island) (wedge-tailed shearwater)New South Wales oceanic islands (e.g. Solitary Island, Cabbage Tree Island, Muttonbird Island, Bird Island) (sooty shearwater, wedge-tailed shearwater).
- Tasmanian oceanic islands (e.g. Babel Island) (sooty shearwater, short-tailed shearwater).

Breeding season in eastern and south-eastern Australia for shearwaters is typically over summer; late-August/early-September to May (DEE 2017d, 2017e, 2017f, 2017g). However, the little shearwater breeds during winter and spring (DEE 2017h). Shearwater nests are usually in burrows or rock crevices. The timing of the incubation phase for shearwaters occurs between 21-24 November (±8 days) (Beaver, 2022). The arrival through to the incubation phase for wedge-tailed shearwaters use areas close to the colony using habitat south of Montague Island into the western edge of Bass Strait (Beaver, 2022). During the chick-rearing phase, occurring from 10-13 January (± 10 days), shearwaters are known to use areas further south past Bass Strait into south-east of Tasmania (Beaver, 2022).

Shearwaters are known to forage for a variety of pelagic prey, including krill, cephalopods, fish and crustaceans. Food is usually taken by pursuit-plunging, surface plunging or surface-seizing; however other methods (e.g. hydroplaning, deep plunging) may be used. South eastern Australia is characterised by contrasting oceanic conditions which can influence the foraging decisions of breeding short-tailed shearwaters. During the chick-rearing period, many shearwater species use a dual foraging strategy, generally involving short trips close to the breeding grounds and longer trips extending to highly productive areas, such as the Southern Ocean (Berlincourt and Arnould, 2015).

The short-tailed shearwater is one of few native birds that is commercially harvested (Tasmania Parks & Wildlife Service, 2014). Short-tailed shearwaters, or “Muttonbird” are harvested annually in Tasmania under the regulation of the Tasmanian government (CoA, 2020). Harvesting muttonbirds is a traditional activity that Tasmanian Aboriginal peoples have participated in for thousands of years. There are 3 separately managed harvests that occur in Tasmania:

- Indigenous commercial harvest - occurs on 3 islands in the Bass Strait (Trefoil Island, Great Dog (or Big Dog) Island and Babel Island). This harvest is licensed by the Tasmanian Government but entirely self-managed with no set quotas, just a restricted season duration.
- Indigenous cultural harvest – undertaken under permit on a couple of small sites including South Arm and Cape Queen Elizabeth on Bruny Island. The Tasmanian Government monitors the South Arm colony, the number of harvesters is restricted, and daily bag limits apply. There is also a small unreported cultural harvest on indigenous-owned islands.
- Recreational harvest – undertaken under licence between 38 and 44 of Tasmania’s known 209 colonies and is open to anyone eligible for purchasing a recreational licence. Harvest areas include the Bass Strait Island of King Island, Hunter Island Group and the Furneaux Island Group. The season generally runs for 16 days with a daily bag limit of 25 birds (15 on the west coast) (CoA, 2020).

3.12.4 Terns

There are 11 species of tern that may occur within the Environmental Sectors, and all have been identified as using the area for breeding (Table 3-16). A BIA, for foraging and breeding, has been identified for the following three tern species: greater crested tern, sooty tern and white-fronted tern (Figure 3-34).

Many of the tern species are widespread and occupy beach, wetland, grassland and beach habitats. Terns rarely swim; they hunt for prey in flight, dipping to the water surface or plunge-diving for prey

(Flegg, 2002) usually within sight of land, for fish, squid, jellyfish and sometimes crustaceans (DEWHA, 2007).

Terns breed in colonies on small offshore islands, including those of the Furneaux Group in eastern Bass Strait, and the Lord Howe island group. Nests are in the open in sand or coral scrapes or among low vegetation (DoE, 2025). The greater crested tern is not listed as threatened species under the EPBC Act; however, it is listed as migratory. During the breeding season this species can be found on islands and coastlines of tropical and subtropical areas, including Australia, where it breeds in dense colonies or in small groups. Outside of the breeding season it can be found at sea throughout this range (CoA, 2020).

Tern species may be susceptible to impacts from artificial light pollution including foraging and nesting interference as well as disorientation during migration (CoA, 2020). Bright lights may disorient adult terns, during colony establishment or when returning to nests at night. This can lead to nest abandonment, exposing eggs and chicks to the elements or predators (CoA, 2020).

3.12.5 Parrots

Parrots are very social birds that are characterized by their strong, hooked bills, zygodactyl feet (two toes facing forward and two backward) and vibrant plumage. In, Australia parrots have adapted to diverse ecosystems, thriving in environments which range from arid landscapes to lush rainforests. There are 4 species of parrots that may occur within the Environmental Sectors (Table 3-16):

- orange-bellied parrot
- blue-winged parrot
- swift parrot
- Coxen's fig-parrot.

The breeding range of the swift parrot is largely restricted to the east and south-east coast of Tasmania and closely mirrors the distribution of blue gum tree (TSSC, 2016d). Individuals will begin to make the migration over to mainland Australia in autumn where they will spend in the non-breeding season. Primary habitat is dry forests and woodlands of the box-ironbark region on the inland slopes of the Great Dividing Range in Victoria. Swift parrots are primarily active during the day (unless roosting). The species can also be found in NSW where they occupy forests and woodlands throughout the coastal and western slopes regions (TSSC, 2016d).

The orange-bellied parrot is endemic to south-eastern Australia (DELWP, 2016) and participates in yearly migrations over the Bass Strait from breeding grounds in Tasmania to the mainland Australia, each winter between late February to early April (Australian Museum, 2022).

The breeding range of the orange-bellied parrot is restricted to the south-west of Tasmania, within 10 km of the Melaleuca Lagoon. Breeding habitat is characterised by a mosaic of Eucalypt forest, rainforest and fire dependent moorland and sedgeland plains, in the Tasmanian Wilderness World Heritage Area (DELWP, 2016). This species is endemic to south-eastern Australia and migrates from breeding grounds in Melaleuca to mainland Australia in April each year (DELWP, 2016). The migration route follows the west coast of Tasmania, with some individuals known to stop on King Island during the northward migration in autumn. Over winter individuals can be found along the coast of South Australia and Victoria where they are found in locations associated with coastal saltmarshes and adjacent pastures, close to free-standing water bodies (DELWP, 2016). The migration back to breeding grounds begins in late September and appears to be more rapid with no stopovers on King Island (NRE Tas, 2023). Migrating orange-bellied parrot individuals have been

assumed to mostly travel at night (Australian Museum, 2022), however there is limited evidence of nocturnal migratory behaviour for this species.

Because the wild population of this species is small and difficult to detect, published data on the distribution of the orange-bellied parrot is limited to known breeding and non-breeding locations. However, it is likely that other breeding locations and migratory routes may become important as the population increases (DELWP, 2016). The 2023-24 breeding season showed a record number of 81 orange bellied parrots return to breeding grounds and production of 59 fledglings, the third highest fledgling production since 2004 (NRE Tas, 2024b). It is estimated that a total of 139 individuals would have migrated north from the breeding grounds at the end of the 2022/23 breeding season of which 81 returned for the 2023/24 breeding season resulting in a 58% return rate (DPC, 2023).

3.12.6 Sandpipers

There are fifteen species of sandpiper that may occur in the Environmental Sectors (Table 3-16):

- sharp-tailed
- broad-billed
- wood
- marsh
- Terek sandpiper
- ruddy turnstone
- sanderling
- great knot
- red knot
- little curlew
- eastern curlew
- whimbrel
- phalaropus lobatus
- ruff
- common greenshank.

Sandpipers breed in Europe and Asia and migrate to Australia during the southern summer. They are small wader species found in coastal and inland wetlands, particularly in muddy estuaries, feeding on small marine invertebrates. Up to 3,000 sharp-tailed sandpiper and up to 1,800 curlew sandpipers are known to congregate to feed at the Gippsland Lakes. Curlew sandpipers breed in Siberia and migrate to Australia, arriving around September each year (DoE, 2015c). The species forages mainly on invertebrates, including worms, molluscs, crustaceans, and insects. Curlew sandpipers usually forage in water, near the shore or on bare wet mud at the edge of wetlands. The species is threatened by the sustained loss of intertidal mudflat habitat at key migration staging sites in the Yellow Sea (DoE, 2015c).

3.12.7 Plovers

There are six species of plover that may occur in the Environmental Sectors (Table 3-16):

- double-banded
- lesser sand
- red-capped
- oriental
- pacific golder
- grey plover.

Plovers are medium sized wading birds that have wide-ranging coastal habitats comprising estuaries, bays, mangroves, damp grasslands, sandy beaches, sand dunes, mudflats, and lagoons (Flegg, 2002), with roosting also taking place on sand bars and spits. Plovers feed on a range of molluscs, worms, crustaceans, and insects. Plovers (with the exception of the red-capped plovers) breed in Asia and the Artic region and are more likely to be present in Australia during summer, depending on the species. The Red-capped Plover is Australia's smallest beach-nesting shorebird. While migratory shorebirds are here only for the spring and summer months, Red-capped Plovers spend their entire lives on Australian shores.

3.12.8 Other

A variety of the seabird and shorebird species aggregate in areas of the Environmental Sectors to roost (Table 3-16), including:

- two species of snipe (Swinhoe's, and pin-tailed snipe)
- two species of tattler (grey-tailed and wandering tattler)
- two species of stint (red-necked and long-toed stint)
- numerous individuals: oriental pratincole, black-winged stilt, white-throated needletail, black-tailed godwit, and red-necked avocet.

Snipes are present during the southern hemisphere summer (breeding in Asia and Russia in the northern hemisphere summer). They are medium-sized waders that roost among dense vegetation around the edge of wetlands during the day and feed at dusk, dawn and during the night on seeds, plants, worms, insects, and molluscs (Birdlife Australia, 2025). There are few records of the pin-tailed snipe in Victoria. The species is threatened by the loss and degradation of wetlands, through drainage and diversion of water for agriculture and reservoirs (Birdlife Australia, 2025).

Tattlers are shorebirds found along coastal regions with prefered habitat including rocky coasts, offshore islands, reefs, mudflats and sandy beaches. Tattlers forage in shallow water on hard intertidal substrates such as reefs, rock pools and also amongst rocks and shingle. Their diet includes polychaetes, molluscs, crustaceans, insects and occasionally fish. Tattlers roost on beaches, reef and boulders. Tattlers breed in the Northern Hemisphere between May and August and migrate to Australia arriving from September (occasionally as early as July), and leave Australia between March and June. (Department of the Environment, 2025a) (Department of the Environment, 2025b).

Stints are small migratory shorebirds that breed in the northern hemisphere, generally arriving in Australia between August and October and departing February to April. Stints are distributed along the Australian coastline found in sheltered inlets, estuaries, mudflats, grassy pools and wetlands,

and also inland. They forage on intertidal mudflats or sandflats, or in very shallow water feeding on aquatic invertebrates and small vertebrates during daylight hours. Stints roost on sheltered beaches, banks or islets of sand, mud or shingle. mudflats, sandy shores and wetland margins. (Department of the Environment, 2025c) (Department of the Environment, 2025d).

Oriental Pratincole are a tern-like shorebird with records of presence in all states at scattered sites including at Lord Howe Island. The Oriental Pratincoles breed in the northen hemisphere arriving in Australia in October and November in large numbers, remaining until March or April. In Australia the Oriental Pratincole occur along the coast inhabiting beaches, mudlands and often occur in ilands and also open plains, floodplains and wetlands. They generally roost in bare areas including claypans and areas with low vegetation. The Oriental Pratincoles feeds on inspects both aerially and from the ground (Department of the Environment, 2025e).

Black-winged stilts are migratory wader birds that breed in Asia and winter in Australia arriving between August and November, returning to their breeding areas between March and April. Their preferred habitat outside their breeding season includes coastal habitats, mudflats, marshes and swamps. Their diet includes aquativ insects, molluscs, crustaceans and small fish (BirdLife International, 2016).

White-throated needletail is migratory bird that arrives in Australia from September to November, being widespread along the coasts of eastern and south-eastern Australia and vagrant to outlying islands including Lord Howe island. Most birds leave Australia in March and April flying North.. They are almost exclusively aerial, althought they occur over most habitats and have been recorded in coastal areas over sandy beaches, mudflats and coastal cliffs. In Australia, White-throated Needletails almost always forage aerially, and have been recorded roosting in trees in forests and woodlands (Department of the Environment, 2025f).

Black-tailed godwits are large waders that are found around all coastal regions of Australia during the southern hemisphere summer (breeding in Europe during the northern hemisphere summer), though the largest numbers remain in northern Australia. Godwits are commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand, or shell-grit where they forage on intertidal mudflats or sandflats, in soft mud or shallow water and occasionally in shallow estuaries (Birdlife Australia, 2025). They have been recorded eating annelids, crustaceans, arachnids, fish eggs and spawn and tadpoles of frogs, and occasionally seeds.

The **red-necked avocet** is a wader native to Australia found widespread except in the north and north east. The red-necked avocet is nomadic with movements dependent on rainfall and finding suitable habitat. They have a preference for salt or brackish water and are found in shallow wetland areas. Their diet consists of small invertebrates found in water and mud. The red-necked avocet nests in the southwest from August to November with small colonies documented on Port Philip Bay (Atlas of Living Australia, 2025a).

Many other species also breed within areas of the Environmental Sectors (Table 3-16), including:

- grey noddy, black noddy and common noddy, Tasmanian wedge-tailed eagle, and little penguin
- white-bellied sea eagle, kelp, silver and pacific gulls, and Australian gannet
- satin flycatcher, osprey, red-tailed tropicbird
- black-faced cormorant
- grey ternlet
- masked and brown boobyfairy prion.

The **grey, black and common noddy** can be found off the Queensland coast, and around Lord Howe Island. They are typically pelagic during non-breeding season, but during breeding season can be found on or near islands, rocky islets or rocky cliff areas. Breeding is not synchronised and can occur at varied times throughout the year. Breeding colonies are recorded on around 50 Australian islands, ranging from a few pairs to over 100,000 pairs. This species feed during the day foraging mainly on fish, but may also consume squid, molluscs, aquatic insects, and fruit. They feed by hover-dipping and contact-dipping. The common noddy is considered to forage further from the shore than other similar species (DoE, 2025). A BIA for breeding and foraging, has been identified around Lord Howe Island and offshore Queensland (Figure 3-35).

The **Tasmanian wedge-tailed** eagle is a large bird found only on Tasmania and nearby islands both in coastal and inland areas. They have been recorded in habitats including forests, coastal heathland, small wetlands and riparian vegetation. After leaving their parents juveniles disperse widely, with adults remaining on their territories throughout the year. Tasmanian wedge-tailed eagles rest and breed in native forests, especially those dominated by Eucalyptus species. They breed from late winter to summer, with eggs laid August to September. The Wedge-tailed Eagle is carnivorous, and feeds on both live prey and carrion (Department of the Environment, 2025g).

The **Little Penguin** is the smallest species of penguin in the world and are permanent residents on a number of inshore and offshore islands. The Australian population is large but not thought to exceed one million birds (DoE, 2015a). Bass Strait has the largest proportion (approximately 60%) of the known breeding colonies in Australia; however, breeding populations are also found on the New South Wales coast. Individuals exhibit strong site fidelity, returning to the same breeding colony each year to breed in the winter and spring months (Gillanders et al., 2013). The diet of a Little Penguin includes small school fish, squid and krill. Prey is typically caught with rapid jabs of the beak and swallowed whole. A BIA for breeding and foraging, has been identified for the little penguin (Figure 3-35). Little penguins are also an important component of the Australian and New Zealand fur-seals' diet (Parliament of South Australia, 2011). Little penguins are primarily nocturnal which may make them susceptible to impacts from artificial light (CoA, 2020).

The **white-bellied sea eagle** is a raptor distributed along the coastline and around terrestrial wetlands of coastal Australia and the offshore islands. Coastal occurrences include locations around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves. Breeding occurs in woodland with nests also found in closed scrub or remnant trees. The White-bellied Sea-Eagle generally forages over large expanses of open water. The breeding season is between June and January in Southern Australia with nests built in trees, mangroves, cliffs, rocky outcrops and on the ground. The white-bellied sea eagle diet includes fish, birds, reptiles, mammals and crustaceans, carrion and offal (Department of the Environment, 2025h).

Kelp, silver and pacific gulls are resident to Australia and found along coastal and inland areas, particularly in southern Australia, Tasmania and Bass Strait islands. They inhabit sheltered coastal harbours, bays, inlets, estuaries, beaches and rocky shores, usually foraging within 10 km of the shore. Kelp and Pacific gulls breed September to January, Silver gulls may breed year-round (CoA, 2020).

The **Australasian gannet** generally feeds over the continental shelf or inshore waters. Their diet is comprised mainly of pelagic fish, but also squid and garfish. Prey is caught mainly by plunge-diving, but it is also seen regularly attending trawlers. Foraging generally occurs during the day over the continental shelf or inshore waters. Australian gannets rely on their vision to locate prey and have been shown to visually accommodate when transitioning between underwater and aerial environments during foraging activities (Machovsky-Capuska et al., 2012). Breeding is highly seasonal (October–May), nesting on the ground in small but dense colonies (DoE, 2015a). Important

breeding locations for the Australian Gannet within the Environmental Sectors include Pedra Branca, Eddystone Rocks, Sidmouth Rocks, and Black Pyramid (Tasmania) and Lawrence Rocks (Victoria). A BIA, for foraging and aggregation, has been established (Figure 3-35).

The **satin flycatcher** is native to Australia and are widespread along the south and eastern regions including Tasmania. The satin flycatcher migrates to these areas to breed, arriving between August and November, breeding primarily September to January before migrating northward departing between February and May. The diet of the satin flycatcher is mainly arthropods mostly insects foraging in the canopy and subcanopy of trees. The preferred habitat is within eucalypt forests, often near wetlands or watercourses (2025i).

The **osprey** is a medium sized raptor with widespread distribution across almost all mainland Australian coastlines with a vagrant population in Tasmania. Adults are mostly resident or sedentary around breeding territories. Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands and are mostly found in coastal areas. They visit wetland habitats including reefs, bays, coastal cliffs, beaches, estuaries and mangrove swamps. Osprey nest sites include natural bushes, cliffs, rocks, beaches and saltmarshes, and manmade jetties, offshore drilling rigs and platforms. Eastern Ospreys mainly feed on fish, especially mullet where available Department of the Environment, 2025j).

The **red-tailed tropicbird** is an oceanic seabird widely distributed through the tropical Pacific and Indian Oceans. It is typically a pelagic species but comes onshore during breeding season. The red-tailed tropicbird nests individually or in small breeding colonies and is territorial. Breeding is known to occur on Lord Howe Island; and a BIA around this region has been established (Figure 3-36). The birds forage on fish and squid by diving deeply into the water.

The **black-faced cormorant** is endemic to southern Australia (DoE, 2015a) ; and is primarily found along the rocky coasts of Tasmania and Victoria, favouring rocky coasts. The species feeds in coastal waters on a variety of fish, typically catching prey by pursuit-diving. Black-faced cormorants are mainly active during the day. There are 40 significant breeding sites (defined as more than 10 breeding pairs) known for the species in southern Australia, recognised as BIAs (Figure 3-36). Breeding usually occurs on rocky islands, but also on stacks, slopes and sea cliffs in colonies of up to 2500 individuals (DoE, 2015a).

Within Australia waters, the **grey ternlet** is found on both the Lord Howe and Norfolk Island groups; and may occasionally occur in waters off the eastern coast of Australia. A BIA has been established for this species around Lord Howe Island (Figure 3-32). They typically nest and roost in coastal regions, usually on steep cliff faces; and forage over waters close to shore. In Australia, breeding takes place during spring and summer; eggs have been recorded from early-September to early-January, and nestlings from early-October to mid-March.

The **masked booby** occurs across northern Australia, extending to Brisbane and islands offshore of the east coast of Australia (including Lord Howe Island). The masked booby is a pelagic marine bird using tropical and subtropical waters and feeds by plunge diving on the ocean. The masked booby nests in small colonies, breeds on oceanic islands, atolls and cays, usually far from mainland area; and areas of level open ground are preferred for nest sites. The breeding population on Lord Howe Island is the most southerly breeding colony in the world; on Lord Howe Island, peak laying is in December. A BIA, for breeding, has been identified around Lord Howe Island and offshore from Queensland (Figure 3-36).The **brown booby** is a common, pelagic and migratory species which occurs throughout the world's tropical oceans. The species forages on fish species and cephalopods in the North Marine Region and breeds in adjacent areas. Nesting typically occurs on islands in Australian tropical waters, such as off the coast of Queensland. The breeding season for brown

boobies varies, with egg laying recorded throughout the year at many locations (Marchant & Higgins 1990); however, young birds may disperse and/or migrate when not breeding. Adults typically nest annually and most often do with the same partner. The brown booby are plunge-divers, where they feed on small fish, squid, or shrimp which gather at the water surface.

The **fairy prion (southern)** breeds on Macquarie Island and other subantarctic islands outside of Australia (NRE Tas, 2024). The species has a breeding population of 50 to 250 breeding pairs in Australia and the subantarctic islands. This species will dig burrows among the rocks or low vegetation for nesting. Their foraging activities involve plucking food from the ocean surface, usually feeding off small fish or krill. Some individuals have been recorded to migrate towards New Zealand and Southern Australia (DoE, 2025). Fairy prions generally forage during the day and are only active at night around breeding colonies.

Table 3-16: EPBC Act Listed Seabird and Shorebird Species or Species Habitat that May Occur within the Environmental Sectors

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Albatross															
Diomedea antipodensis	Antipodean Albatross	V	✓(M)	✓	*	[1]	FLO*f	FLO	FLO*f	FLO*f	FLO*f	FLO*f	FLO	FLO	FLO
Diomedea epomophora	Southern Royal Albatross	V	✓ (M)	✓		[1]	FLO	FLO	FLO	FLO	FLO	FLO	FLO	FLO	FLO
Diomedea exulans	Wandering Albatross	V	✓ (M)	✓	*	[1]	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	FLO	FLO
Diomedea antipodensis gibsoni	Gibson's Albatross	V		✓		[1]	FLO	FLO	FLO	FLO	FLO	FLO	FLO	FLO	FLO
Diomedea sanfordi	Northern Royal Albatross	E	✓ (M)	✓		[1]	FLO	FLO	FLO	FLO	FLO	LO			
Phoebetria fusca	Sooty Albatross	V	✓ (M)	✓		[1]	LO	LO	LO	LO	LO	MO	MO		
Thalassarche bulleri	Buller's Albatross	V	✓ (M)	✓	*	[1]	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	LO	MO	MO	MO
Thalassarche bulleri platei	Pacific Albatross	V		✓		[1]	FLO	FLO	FLO	FLO	FLO	LO	MO	MO	MO
Thalassarche carteri	Indian Yellow-nosed Albatross	V	✓ (M)	✓	*	[1]	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	LO	LO
Thalassarche cauta	Shy Albatross	E	✓ (M)	✓	*	[1]	FLO*b, f	BKO*f	FLO*f	BKO*b, f	FLO*f	FLO*f	MO	MO	
Thalassarche chrysostoma	Grey-headed Albatross	E	✓ (M)	✓		[2],[1], [3]	MO	MO	MO	FLO	FLO				

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Thalassarche eremita	Chatham Albatross	E	✓ (M)	✓		[1]		FMO	FMO		FMO	FMO			MO
Thalassarche impavida	Campbell Albatross	V	✓ (M)	✓	*	[1]	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	MO*f	MO*f	MO	MO
Thalassarche melanophris	Black-browed Albatross	V	✓(M)	✓	*	[1]	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	FLO*f	FLO	FLO
Thalassarche salvini	Salvin's Albatross	V	✓ (M)	✓		[1]	FLO	FLO	FLO	FLO	FLO	FLO	FLO	FLO	FLO
Thalassarche steadi	White-capped Albatross	V	✓ (M)	✓	*	[1]	FKO	FKO	FLO*f	FKO	FKO	FLO*f	LO	MO	MO
Petrel															
Fregetta grallaria grallaria	White-bellied Storm-Petrel	V			*	[3]	LO	LO	LO	LO	LO	BKO	LO	BKO*b, f	LO
Halobaena caerulea	Blue Petrel	V		✓		[5]	MO	MO	MO	MO	MO	MO			
Macronectes giganteus	Southern Giant Petrel	E	✓ (M)	✓	*	[1]	FLO	FLO	FLO*f	FLO	FLO	MO*f	MO*f	MO	MO
Macronectes halli	Northern Giant Petrel	V	✓ (M)	✓	*	[1]	FLO	FLO	FLO*f	FLO	FLO	FLO*f	MO*f	FLO	FLO
Pelagodroma marina	White-faced Storm Petrel			✓	*		BKO	BKO*b, f	BKO*b, f		BKO*b, f	BKO			
Pelecanoides urinatrix	Common Diving-Petrel			✓	*		BKO*b, f	BKO*b, f		BKO*b, f	BKO*b, f				

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Pterodroma cervicalis	White-necked Petrel			✓				MO	MO		MO	BLO	BLO	MO	BKO
Pterodroma heraldica	Herald Petrel	CE				[6], [7]						LO	LO	MO	MO
Pterodroma leucoptera leucoptera	Gould's Petrel	E			*	[8]	MO	MO	BKO	MO	MO	BKO*b, f	MO	MO	MO
Pterodroma macroptera	Great winged Petrel			✓	*		FKO		MO*f			*f	*f	*f	
Pterodroma mollis	Soft-plumaged Petrel	V		✓	*	[9]	FLO	MO		BKO*b, f	MO*f				
Pterodroma nigripennis	Black-winged Petrel			✓	*							BKO	BKO	BKO*b, f	BKO
Pterodroma solandri	Providence Petrel			✓	*							BKO		BKO*b, f	BKO
Pterodromoa neglecta neglecta	Kermadec Petrel (western)	V			*				FMO			FMO	FMO	BKO	BKO
Plover															
Charadrius bicinctus	Double-banded Plover		✓ (W)	✓			RKO	RKO	RKO	KO	RKO	RKO	RKO		
Charadrius leschenaultii	Greater Sand Plover	V	✓ (W)	✓		[11]	KO	KO	KO	LO	MO	KO	KO	KO	
Charadrius mongolus	Lesser Sand Plover	E	✓ (W)	✓		[11], [12]	RKO	RKO		KO	KO	RKO	RKO		

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Charadrius ruficapillus	Red-capped Plover			✓			RKO	RKO	RKO	KO	RKO	RKO	RKO		
Charadrius veredus	Oriental Plover		✓ (W)	✓				KO			KO	RKO	RKO		
Pluvialis fulva	Pacific Golden Plover		✓ (W)	✓			RKO	RKO		KO	RKO	RKO	RKO		
Pluvialis squatarola	Grey Plover		✓ (W)	✓		[37]	RKO	RKO		KO	KO	RKO	RKO		
Thinornis cucullatus	Hooded Plover			✓			KO	KO	KO	KO	KO	KO			
Thinornis cucullatus cucullatus	Hooded Plover (eastern)	V		✓		[14]	KO	KO	KO	KO	KO	KO			
Sandpiper															
Actitis hypoleucos	Common Sandpiper		✓ (W)	✓			KO	KO	KO	MO	KO	KO	KO	KO	KO
Arenaria interpres	Ruddy Turnstone	V	✓ (W)	✓		[41]	RKO	RKO	RKO	KO	RKO	RKO	RKO		
Calidris acuminata	Sharp-tailed Sandpiper	V	✓ (W)	✓		[38]	RKO	RKO	RKO	KO	RKO	RKO	RKO	KO	KO
Calidris alba	Sanderling		✓ (W)	✓			RKO	RKO	RKO	KO	RKO	RKO	RKO		
Calidris canutus	Red knot	V	✓ (W)	✓		[20]	KO	KO	KO	KO	KO	KO	KO	KO	MO

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Calidris ferruginea	Curlew Sandpiper	CE	✓ (W)	✓		[15]	KO	KO	KO	KO	KO	KO	KO	KO	
Calidris melanotos	Pectoral Sandpiper		✓ (W)	✓			KO	KO	KO	MO	KO	KO	KO	KO	KO
Calidris pugnax	Ruff		✓ (W)	✓			RKO	RKO		KO	KO	RKO	RKO		
Calidris tenuirostris	Great Knot	V	✓ (W)	✓		[21]	RKO	RKO	RKO	KO	KO	RKO	RKO		
Limicola falcinellus	Broad-billed Sandpiper		✓ (W)	✓				RKO				RKO	RKO		
Numenius minutus	Little Curlew		✓ (W)	✓			RLO	RKO	RLO		RLO	RLO	RKO		
Numenius phaeopus	Whimbrel		✓ (W)	✓			RKO	RKO	RKO	KO	KO	RKO	RKO		
Phalaropus lobatus	Red-necked Phalarope		✓ (W)	✓				RKO							
Tringa glareola	Wood Sandpiper		✓ (W)	✓			RKO	RKO				FKO	RKO		
Tringa nebularia	Common Greenshank	E	✓ (W)	✓		[44]	KO	KO	KO	KO	KO	KO	KO	MO	
Tringa stagnatilis	Marsh Sandpipier		✓ (W)	✓			RKO	RKO				RKO	RKO		
Xenus cinereus	Terek Sandpiper	V	✓ (W)	✓		[39]	RKO	RKO		KO	KO	RKO	RKO		

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Shearwater															
Calonectris leucomelas	Streaked Shearwater		✓ (M)	✓								KO	KO		
Puffinus assimilis	Little Shearwater			✓	*							BKO		BKO*b, f	BKO
Ardenna carneipes	Flesh-footed Shearwater		✓ (M)	✓	*		KO	FLO	FLO*f	FLO	FLO	BKO*f	KO*f	BKO*b, f	KO
Ardenna grisea	Sooty Shearwater	V	✓ (M)	✓	*	[40]	MO	MO	BKO*b, f	BKO*b, f	BKO*b, f	BKO*b, f	LO	MO	MO
Ardenna pacifica	Wedge-tailed Shearwater		✓ (M)	✓	*		*b,f	*b,f	BKO*b, f			BKO*b, f	BKO*b, f	BKO*b, f	BKO
Ardenna tenuirostris	Short-tailed Shearwater		✓ (M)	✓	*		BKO*f	BKO*b, f	BKO*b, f	BKO*b, f	BKO*b, f	BKO*b, f			
Tern															
Sternula albifrons	Little Tern	V	✓ (M)	✓		[86]	BKO	BKO	BKO	BKO	BKO	BKO	BKO		
Thalasseus bergii	Greater Crested Tern		✓ (W)	✓	*		BKO	BKO	BKO*b, f	BKO		BKO	BKO*b, f		
Hydroprogne caspia	Caspian Tern		✓ (M)	✓			BKO	BKO	BKO	BKO	BKO		BKO		
Sterna dougallii	Roseate Tern		✓ (M)	✓									BKO		

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Onychoprion fuscatus	Sooty Tern			✓	*		BKO	BKO	BKO						
Onychoprion anaethetus	Bridled Tern		✓ (M	✓			BKO						BKO		BKO
Sternula nereis	Fairy Tern			✓		[15], [16]	BKO	BKO	BKO						
Sterna striata	White-fronted Tern			✓	*		FLO	BKOb,f	FLO	FLO	FLO	FLO	FLO	FLO	FLO
Sterna sumatrana	Black-naped Tern		✓ (M)	✓									BKO		
Sternula nereis nereis	Australian Fairy Tern	V				[13]	KO	KO	KO	KO	KO	KO	MO		
Thalasseus bengalensis	Lesser Crested Tern			✓									BKO		
Other															
Acanthiza pusilla magnirostris	King Island Brown Thornbill, Brown Thornbill (King Island)	E				[45]	KO	KO							
Acanthornis magna greeniana	King Island Scrubtit, Scrubtit (King Island)	CE				[47]	KO	KO							
Anous albivitta	Grey Noddy			✓								KO		BKO	BKO
Anous minutus	Black Noddy			✓	*								BKO*b, f	*b,f	BKO

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Anous stolidus	Common Noddy		✓ (M)	✓	*		LO	LO	MO			BKO	BKO*b, f	BKO*b, f	BKO
Anseranas semipalmata	Magpie Goose			✓			MO						MO		
Anthochaera phrygia	Regent Honeyeater	CE				[39] [40]	MO	BKO	KO			KO	KO		
Aphelocephala leucopsis	Southern Whiteface	V				[51]	LO	KO	MO			MO			
Apus pacificus	Fork-tailed Swift		✓ (M)	✓			LO	LO	LO	LO	LO	LO	LO		
Ardea ibis (former Bubulcus ibis)	Cattle Egret			✓			MO	BLO	MO	MO	MO	BLO	BLO		
Atrichornis rufescens	Rufous Scrub-bird	E										MO			
Aquila audax fleayi	Tasmanian Wedge-tailed Eagle	E				[14]	BLO	BLO		BLO	BLO				
Botaurus poiciloptilus	Australasian Bittern	E				[68]	KO	KO	KO	KO	KO	KO	KO		
Calidris canutus	Red knot	V	✓ (W)	✓		[20]	KO	KO	KO	KO	KO	KO	KO	KO	MO
Calidris ruficollis	Red-necked Stint		✓ (W)	✓			RKO	RKO	RKO	KO	RKO	RKO	RKO		
Calidris subminuta	Long-toed Stint		✓ (W)	✓				RKO				RKO	RKO		
Callocephalon fimbriatum	Gang-gang Cockatoo	E				[52]	KO	KO	KO			KO			

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Calyptorhynchus banksii graptogyne	South-eastern Red-tailed Black-Cockatoo	E				[53]	FKO								
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V				[54]		MO	KO			KO	KO		
Ceyx azureus diemenensis	Tasmanian Azure Kingfisher	E				[84]	KO	BKO		BKO	KO				
Chalcites osculans	Black-eared Cuckoo			✓			KO	KO							
Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)	V				[55]	MO	KO	KO			KO	KO		
Stercorarius antarcticus	Brown Skua			✓			MO	MO	MO	MO	MO	MO	MO		
Cuculus optatus	Oriental Cuckoo		✓ (T)	✓					KO			KO	KO		
Cyanoramphus cookii	Norfolk Island Green Parrot	E				[83]									BKO
Cyclopsitta diophthalma coxeni	Coxen's Fig-Parrot	CE				[81], [82]						MO	KO		
Dasyomis brachypterus	Eastern Bristlebird	E				[22]			KO			KO			
Epthianura crocea macgregori	Capricorn Yellow Chat	CE				[23]							KO		
Erythrotriorchis radiatus	Red Goshawk	V				[26], [25]						MO	KO		

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Eudyptula minor	Little Penguin			✓	*		BKO	BKO*b, f	BKO*b, f	BKO*b, f	BKO*b, f	BKO*b, f			
Falco hypoleucos	Grey Falcon	E				[45]	LO	LO	LO			LO	LO		
Fregata ariel	Lesser Frigatebird		✓ (M)	✓					MO			KO	KO	LO	KO
Fregata minor	Great Frigatebird		✓ (M)	✓					MO			KO	KO	KO	KO
Gallinago hardwickii	Latham's Snipe	V	✓ (W)	✓		[42]	KO	KO	KO	KO	KO	KO	KO		
Gallinago megala	Swinhoe's Snipe		✓ (W)	✓			RLO	KO	RLO		RLO	RLO	RKO		
Gallinago stenura	Pin-tailed Snipe		✓ (W)	✓			RLO	RKO	RLO		RLO	RLO	RLO		
Geophaps scripta scripta	Squatter Pigeon (southern)	V				[80]							KO		
Glareola maldivarum	Oriental Pratincole		✓ (W)	✓									RKO		
Grantiella picta	Painted Honeyeater	V				[57] [58]	MO	KO	KO			KO	KO		
Haliaeetus leucogaster	White-bellied Sea Eagle			✓			BKO	BKO	BKO	BKO	BKO	BKO	BKO		
Hypotaenidia sylvestris	Lord Howe Woodhen	E				[78], [79]						BLO		BLO	

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Leipoa ocellata	Malleefowl	V				[59]	LO								
Tringa brevipes	Grey-tailed Tattler		✓ (W)	✓			RKO	RKO	FKO	KO	KO	RKO	RKO		
Tringa incana	Wandering Tattler		✓ (W)	✓				RKO				RKO	RKO		
Himantopus himantopus	Black-winged Stilt			✓			RKO	RKO	RKO	KO	KO	RKO	RKO		
Hirundapus caudacutus	White-throated Needletail	V	✓ (T)	✓		[77]	RKO	RKO	KO	RKO	KO	KO	KO		
Larus dominicanus	Kelp Gull			✓				BKO				BKO			
Chroicocephalus novaehollandiae	Silver Gull			✓			BKO	BKO	BKO	BKO	BKO	BKO	BKO		
Larus pacificus	Pacific Gull			✓			BKO	BKO		BKO	BKO				
Lathamus discolor	Swift Parrot	CE		✓		[27], [28]	KO	KO	KO	BKO	BKO	KO	KO		
Limnodromus semipalmatus	Asian Dowitcher	V	✓ (W)	✓								KO	KO		
Limosa lapponica	Bar-tailed Godwit		✓ (W)	✓			KO	KO	KO	LO	KO	KO	KO	KO	KO
Limosa lapponica baueri	Western Alaskan Bar-tailed Godwit (baueri)	E				[29]	KO	KO	KO	LO	KO	KO	KO	KO	KO

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Limosa limosa	Black-tailed Godwit	E	✓ (W)	✓		[43]	RKO	RKO		KO	KO	RKO	RKO		
Melanodryas cucullata cucullata	South-eastern Hooded Robin	E				[60]	MO	KO	LO			KO	MO		
Merops ornatus	Rainbow Bee-eater			✓			MO	MO	MO			MO	MO		
Monarcha melanopsis	Black-faced Monarch			✓			MO	KO	KO			KO	KO		
Strepera fuliginosa colei	Black Currawong (King Island)	V				[76]	BLO	BLO							
Strepera graculina crissalis	Lord Howe Island Currawong	V										KO	KO		
Symposiachrus trivirgatus	Spectacled Monarch			✓					KO			KO	KO		
Morus capensis	Cape Gannet			✓			BKO	BKO							
Morus serrator	Australasian Gannet			✓	*		BKO*a, f	BKO*a, f		BKO*a, f					BKO
Motacilla cinerea	Grey Wagtail		✓ (T)	✓			KO								
Motacilla flava	Yellow Wagtail		✓ (T)	✓			KO	KO	MO	KO		KO	KO		
Myiagra cyanoleuca	Satin Flycatcher			✓			BKO	BKO	KO	KO	BKO	BKO	BKO		

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Neochmia ruficauda ruficauda	Star Finch (eastern)	E				[75]							LO		
Neophema chrysogaster	Orange-bellied Parrot	CE		✓		[31]	MrKO	MrKO	KO	BKO		MO			
Neophema chrysostoma	Blue-winged Parrot	V		✓		[74]	KO	KO	KO	KO	KO	LO	MO		
Ninox novaeseelandiae undulata	Norfolk Island Boobook	E				[73]									BKO
Numenius madagascariensis	Eastern Curlew	CE	✓ (W)	✓		[33]	KO	KO	KO	LO	KO	KO	KO	KO	KO
Pachycephala pectoralis xanthoprocta	Golden Whistler (Norfolk Island)	V													KO
Pachyptila turtur	Fairy Prion			✓			KO	KO	KO	KO	KO	KO	KO	KO	
Pachyptila turtur subantartica	Fairy Prion (southern)	V				[34]	KO	KO	KO	KO	KO	KO	KO	KO	
Pandion haliaetus	Osprey		✓ (W)	✓			KO	KO	KO			BKO	BKO		
Pardalotus quadragintus	Forty-spotted Pardalote	E				[72]		KO		FKO	FKO				
Pedionomus torquatus	Plains-wanderer	CE				[61], [62]		LO							
Petroica multicolor	Norfolk Island Robin	V													BLO

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Phaethon rubricauda	Red-tailed Tropicbird		✓ (M)	✓	*				KO			BKO	BKO	BKO*b, f	BKO
Phaethon lepturus	White-tailed Tropicbird		✓ (M	✓					MO			KO	KO	KO	KO
Phalacrocorax fuscescens	Black-faced Cormorant			✓	*		BKO	BKO*b, f		BKO*b, f	BKO*b, f				
Platycercus caledonicus brownii	Green Rosella (King Island)	V				[63]	KO	KO							
Pycnoptilus floccosus	Pilotbird	V				[64]		KO	KO			KO			
Procelsterna cerulea	Grey Ternlet, Grey noddy, Blue noddy			✓	*									*b,f	BKO
Recurvirostra novaehollandiae	Red-necked Avocet			✓			RKO	RKO			KO	RKO	RKO		
Rhipidura rufifrons	Rufous Fantail		✓ (T)	✓			KO	KO	KO			KO	KO		
Rostratula australis	Australian Painted Snipe	E		✓		[35], [36]	KO	KO	KO			KO	KO		
Stiltia isabella	Australian Pratincole			✓				KO							
Stagonopleura guttata	Diamond Firetail	V				[65]	KO	KO	KO			KO	LO		
Sula dactylatra	Masked Booby		✓ (M)	✓	*							BKO		BKO*b, f	BKO

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Sula leucogaster	Brown Booby		✓ (M)	✓									BKO		
Turnix melanogaster	Black-breasted Button-quail	V				[69], [70]						MO	KO		
Tyto novaehollandiae castanops (Tasmanian population)	Masked Owl (Tasmanian)	V				[66], [67]	KO	BKO		BKO	BKO				
Listed Critical Habitat															
Thalassarche cauta (Shy Albatross) - Albatross Island, The Mewstone, Pedra Branca								✓		✓	✓				

Threatened Species:

V Vulnerable
E Endangered
CE Critically Endangered

Migratory Species:

M Marine
W Wetland
T Terrestrial

Biologically Important Area:

* BIA Present
a Aggregation
b Breeding
f Foraging

Type of Presence:

MO	Species of species habitat may occur within area
LO	Species or species habitat likely to occur within area
KO	Species or species habitat known to occur within area
MrLO	Migration route likely to occur within area
MrKO	Migration route known to occur within area
FMO	Foraging, feeding or related behaviour may occur within area
FLO	Foraging, feeding or related behaviour likely to occur within area
FKO	Foraging, feeding or related behaviour known to occur within area
BLO	Breeding likely to occur within area
BKO	Breeding known to occur within area

Plan Reference:

[1] National Recovery Plan for Threatened Albatrosses and Giant Petrels, 2011-2016 (DCCEEW, 2022a)
[2] Approved Conservation Advice for *Thalassarche chrysostoma* (grey-headed Albatross) (DEWHA, 2009c)
[3] Commonwealth Listing Advice on *Thalassarche chrysostoma* (grey-headed Albatross (TSSC, 2015q)
[4] Lord Howe Island Biodiversity Management Plan (DECC, 2007)
[5] Conservation Advice for *Halobaena caerulea* (Blue Petrel) (TSSC, 2015d)
[6] Approved Conservation Advice for *Pterodroma heraldica* (Herald Petrel) (TSSC, 2015e)
[7] Commonwealth Listing Advice on *Petrodroma heraldica* (Herald Petrel) (TSSC, 2002)

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	RMO Roosting may occur within area RLO Roosting likely to occur within area RKO Roosting known to occur within area						[8] Gould's Petrel (*Pterodroma leucoptera leucoptera*) Recovery Plan (NSW DEC, 2006) [9] Approved Conservation Advice for *Pterodroma mollis* (Soft-plumaged Petrel) (TSSC, 2015c) [10] Norfolk Island Region Threatened Species Recovery Plan (DCCEEW, 2025a) [11] Conservation Advice for *Charadrius leschenaultia* (Greater Sand Plover) (TSSC, 2016a) [12] Approved Conservation Advice for *Charadrius mongolus* (Lesser Sand Plover) (DCCEEW, 2023m) [13] Wildlife Conservation Plan for Migratory Shorebirds (DoE, 2015e) [14] Approved Conservation Advice for *Thinornis rubricollis rubricollis* (Hooded Plover, Eastern) (TSSC, 2014a) [15] Conservation Advice for *Calidris ferruginea* (Curlew Sandpiper) (DCCEEW, 2023j) [16] Approved Conservation Advice *for Sternula nereis nereis* (Fairy Tern) (DSEWPaC, 2011) [16] Commonwealth Listing Advice on *Sternula nereis nereis* (Fairy Tern) (TSSC, 2011a) [17] Threatened Tasmanian Eagles Recover Plan, 2006-2010 (AGDEW, 2006) [18] Conservation Advice for *Botaurus poiciloptilus* (Australasian Bittern) (TSSC, 2019) [19] Commonwealth Listing Advice on *Botaurus poiciloptilus* (Australasian Bittern) (TSSC, 2011b)									

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
							[20] Conservation Advice for *Calidris canutus* (Red Knot) (DCCEEW, 2024a) [21] Conservation Advice for *Calidris tenuirostris* (Great Knot) (DCCEEW, 2024b) [22] National Recovery Plan for Eastern Bristlebird (*Dasyornis brachypterus*) (CoA, 2022) [23] Yellow chat (Capricorn subspecies) *Epthianura crocea macgregori* recovery plan (Houston and Melzer, 2008) [24] Commonwealth Listing Advice on Epthianura crocea macgregor (yellow chat (Dawson)) (DCCEEW, 2021a) [25] Conservation Advice for *Erythrotriorchis radiates* (red Goshawk) (DCCEEW, 2023l) [26] National Recovery Plan for the red goshawk *Erythrotriorchis radiatus* (DERM, 2012) [27] Conservation Advice for *Lathamus discolour* (Swift Parrot) (TSSC, 2016d) [28] National Recovery Plan for the Swift Parrot (*Lathamus discolor*) (DCCEEW, 2024o) [29] Conservation Advice for *Limosa lapponica baueri* (Alaskan bar-tailed godwit) (DCCEEW, 2024c)) [30] Conservation Advice for *Limosa lapponica menzbieri* (Yakutian bar-tailed Godwit) (DCCEEW, 2024d) [31] National Recovery Plan for the Orange-bellied Parrot (*Neophema chrysogaster*) (DELWP, 2016) [32] Commonwealth Listing Advice on *Neophema chrysogaster* (TSSC, 2006)								

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
							[33] Approved Conservation Advice for *Numenius madagascariensis* (Far Eastern Curlew) (DCCEEW, 2023i) [34] Conservation Advice for *Pachyptila turtur subantartica* (Fairy Prion Southern) (TSSC, 2015gi) [35] Approved Conservation Advice for *Rostratula australis* (Australian Painted Snipe) (DSEWPaC, 2013c) [36] Commonwealth Listing Advice on *Rostratula australis* (Australian Painted Snipe) (TSSC, 2013b) [36] National Recovery Plan for the Australian Painted Snipe (*Rostratula australis*) (DCCEEW, 2022c) [37] Approved Conservation Advice for *Pluvialis squatarola* (grey plover) (DCCEEW, 2024e) [38] Approved Conservation Advice for *Calidris acuminata* (sharp-tailed sandpiper) (DCCEEW, 2024f) [39] Approved Conservation Advice for *Xenus cinereus* (Terek sandpiper) (DCCEEW, 2024g) [40] Conservation Advice for *Ardenna grisea* (sooty shearwater) (DCCEEW, 2023a) [41] Conservation Advice for *Arenaria interpres* (Ruddy Turnstone) (DCCEEW, 2024h) [42] Conservation Advice for *Callinago hardwickii* (Latham's Snipe) (DCCEEW, 2024i) [43] Conservation Advice for *Limosa limosa* (Black-tailed Godwit) (DCCEEW, 2024j) [44] Conservation Advice for *Tringa nebularia* (Common Greenshank) (DCCEEW, 2024k)								

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
							[45] Conservation Advice for *Acanthiza pusilla magnirostris* (King Island brown thornbill) (DCCEEW, 2023c) [46] King Island Biodiversity Management Plan (DPIPWE, 2012) [47] Conservation Advice for *Acanthornis magna greeniana* (King Island scrubtit) (DCCEEW, 2023d) [48] Commonwealth Listing Advice on *Acanthornis magna greeniana* (Scrubtit (King Island)) (DCCEEW, 2021b) [49] National Recovery Plan for the Regent Honeyeater (*Anthochaera phrygia*) (DoE, 2016) [50] Conservation Advice *Anthochaera phrygia* regent honeyeater (DoE, 2015e) [51] Conservation Advice for Aphelocephala leucopsis (southern whiteface) (DCCEEW, 2023e) [52] Conservation Advice for *Callocephalon fimbriatum* (Gang-gang Cockatoo) (DAWE, 2022) [53] National Recovery Plan for the South-Eastern Red-tailed Black-Cockatoo *Calyptorhynchus banksii graptogyne* (CoA, 2007) [54] Conservation Advice for *Calyptorhynchus lathami lathami* (South-eastern Glossy Black Cockatoo) (DCCEEW, 2022b) [55] Conservation Advice for *Climacteris picumnus victoriae* (brown treecreeper (south-eastern)) (DCCEEW, 2022d) [56] Conservation Advice *Falco hypoleucos* Grey Falcon (TSSC, 2020a) [57] Conservation Advice *Grantiella picta* painted honeyeater (DoE, 2015f) [58] National Recovery Plan for the Painted Honeyeater (*Grantiella picta*) (DAWE, 2021a)								

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
							[59] National Recovery Plan for Malleefowl (DCCEEW, 2024) [60] Conservation Advice for *Melanodryas cucullata cucullata* (hooded robin (south-eastern)) (DCCEEW, 2023g) [61] Conservation Advice *Pedionomus torquatus* plains-wanderer (TSSC, 2015n) [62] National Recovery Plan for the Plains-wanderer (*Pedionomus torquatus*) (CoA, 2016). [63] Conservation Advice *Platycercus caledonicus brownii* green rosella (King Island) (TSSC, 2015o) [64] Conservation Advice for *Pycnoptilus floccos*us (Pilotbird) (DAWE, 2022a) [65] Conservation Advice for *Stagonopleura guttata* (diamond firetail) (DCCEEW, 2023h) [66] Conservation Advice for *Tyto novaehollandiae castanops* (Tasmanian Masked Owl) (DEWHA, 2010) [67] Commonwealth Listing Advice on *Tyto novaehollandiae castanops* (Masked Owl) (Tasmanian) (TSSC, 2010b) [68] National Recovery Plan for the Australasian Bittern (*Botaurus poiciloptilus*) (DCCEEW, 2023k) [69] Conservation Advice *Turnix melanogaster* black-breasted button-quail. (TSSC, 2015m) [70] National Recovery Plan for black-breasted button-quail (*Turnix melanogaster*) (DCCEEW, 2022) [71] Conservation Advice *Pardalotus quadraginatus* forty-spotted pardalote (TSSC, 2016)								

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
							[72] National Recovery Plan for the forty-spotted pardalote *Pardalotus quadraginatus* (DCCEEW, 2024i) [73] Conservation Advice *Ninox novaeseelandiae undulata* (Norfolk Island boobook owl) (TSSC, 2016f) [74] Conservation Advice for *Neophema chrysostoma* (blue-winged parrot) (DCCEEW, 2023n) [75] Approved Conservation Advice for *Neochmia ruficauda ruficauda* (Star Finch (eastern)) (DEWHA, 2008a) [76] Conservation Advice *Strepera fuliginosa colei* black currawong (King Island) (TSSC, 2015n) [77] Conservation Advice *Hirundapus caudacutus* White-throated Needletail (TSSC, 2019) [78] Conservation Advice *Hypotaenidia sylvestris* Lord Howe woodhen (TSSC, 2017) [79] Approved Recovery Plan for the Lord Howe Woodhen (NSW NPWS, 2002) [80] Conservation Advice *Geophaps scripta scripta* squatter pigeon (southern) (TSSC, 2015p) [81] Conservation Advice *for Cyclopsitta diophthalma coxeni* (Coxen's fig-parrot) (DCCEEW, 2023p) [82] Coxen's Fig-Parrot *Cyclopsitta diophthalma coxeni* Recovery Plan 2001-2005 (Coxen's Fig-Parrot Recovery Team, 2001) [83] Conservation Advice Cyanoramphus cookii Norfolk Island green parrot (TSSC, 2016f) [84] Approved Conservation Advice for *Ceyx azureus diemenensis* (Tasmanian Azure Kingfisher) (DEWHA, 2010a)								

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
							[85] Conservation Advice *Atrichornis rufescens rufous* scrub-bird (DoE, 2014a) [86] Conservation Advice for *Sternula albifrons* (little tern) (DCCEW, 2025b) [87] Commonwealth Listing Advice on *Macronectes halli* (TSSC, 2001a) [88] Commonwealth Listing Advice on *Macronectes giganteus* (TSSC, 2001b).									

Table 3-17: Seabird and Shorebird Threatened Species Management Advice Relevant to Petroleum Activities within Applicable Amplitude Energy Operating Areas

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
• Antipodean Albatross • Southern Royal Albatross • Wandering Albatross • Gibson's Albatross • Northern Royal Albatross • Sooty Albatross • Buller's Albatross • Pacific Albatross • Shy Albatross • Grey-headed Albatross • Chatham Albatross • Campbell Albatross • Black-browed Albatross • Salvin's Albatross • White-capped Albatross • Southern Giant Petrel • Northern Giant Petrel	National Recovery Plan for Threatened Albatrosses and Giant Petrels (DCCEEW, 2022a)	• Marine pollution • Interactions with offshore installations and ships, including artificial lights	• Marine pollution: Minimise the effects of marine debris, plastics and pollution. – Undertake, as feasible, monitoring of breeding colonies for marine debris, plastics and marine pollution impacts including, as a priority: – Incidence of oiled birds at nest – Effect of plastics and marine pollution – Develop baseline measures of levels of heavy metals and persistent organic pollutants. – Risk-based response strategies are implemented where appropriate, for marine pollution incidents that have the potential to affect breeding populations. • Note: Shy Albatross is the only species that breeds within the Environmental Sectors
Grey-headed Albatross	Approved Conservation Advice for *Thalassarche chrysostoma* (grey-headed Albatross) (DEWHA, 2009c)	Marine pollution, including marine debris	• None identified • See above (for National Recovery Plan for Threatened Albatrosses and Giant Petrels) • Note: Grey-headed Albatross breeding locations are outside of the Environmental Sectors
White-bellied Storm	Lord Howe Island Biodiversity Management Plan (DECC, 2007)	Marine pollution, including marine debris	• None identified • See above (for National Recovery Plan for Threatened Albatrosses and Giant Petrels)

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
			• Note: Grey-headed Albatross breeding locations are outside of the Environmental Sectors
Blue Petrel	Approved Conservation Advice for *Halobaena caerulea* (Blue Petrel) (TSSC, 2015d)	Habitat loss, disturbance and modification	None identified
Herald Petrel	Approved Conservation Advice for *Pterodroma heraldica* (Herald Petrel) (TSSC, 2015e)	None identified	None identified
Gould's Petrel	Gould's Petrel (*Pterodroma leucoptera leucoptera*) Recovery Plan (NSW DEC, 2006)	• Oil spills • Note: oil spills in the vicinity Cabbage Tree Island are not considered a threat because the Gould's Petrel does not feed in coastal waters however, oceanic oil spills may pose some risk (NSW DEC, 2006)	None identified
Soft-plumaged Petrel	Approved Conservation Advice for *Pterodroma mollis* (Soft-plumaged Petrel) (TSSC, 2015c)	None identified	None identified
Sooty Shearwater	Conservation Advice for *Ardenna grisea* (sooty shearwater) (DCCEEW, 2023a)	None identified	None identified
Kermadec Petrel (western)	• Norfolk Island Region Threatened Species Recovery Plan (DCCEEW, 2025a)	None identified	None identified

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
	• Lord Howe Island Biodiversity Management Plan (DECC, 2007)	None identified	None identified
Greater Sand Plover	• Approved Conservation Advice for Charadrius leschenaultia (Greater Sand Plover) (TSSC, 2016a)	Habitat loss and degradation from pollution	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented
Lesser Sand Plover	Approved Conservation Advice for *Charadrius mongolus* (Lesser Sand Plover) (DCCEEW,2023m)	Habitat loss and degradation from pollution	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented
Hooded Plover (eastern)	Approved Conservation Advice for *Thinornis rubricollis* (Hooded Plover, Easter) (TSSC, 2014a)	• Oil spills • Entanglements and ingestion of marine debris	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented. • Marine debris: Evaluate risk of marine debris (including risk of entanglement and/or ingestion) and, if required, appropriate mitigation measures are implemented.
Grey Plover	Approved Conservation Advice for *Pluvialis squatarola* (grey plover) (DCCEEW, 2024e)	Habitat loss	Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies and site managers.
Curlew Sandpiper	Approved Conservation Advice for *Calidris ferruginea* (Curlew Sandpiper) (DCCEEW, 2023j)	• Habitat loss and degradation • Acute and chronic pollution	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented.

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
			• Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.
Australian Fairy Tern	Approved Conservation Advice for *Sternula nereis nereis* (Fairy Tern) (DSEWPaC, 2011a)	Oil spills, particularly in Victoria, where the close proximity of oil facilities poses a risk of oil spills that may affect the species' breeding habitat	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented.
Tasmanian Wedge-tailed Eagle	Threatened Tasmanian Eagles Recover Plan, 2006-2010 (AGDEW, 2006)	Oiling, entanglement, Pollution	None identified
Australasian Bittern	Approved Conservation Advice for *Botaurus poiciloptilus* (Australasian Bittern) (TSSC, 2019)	Reduced water quality as a result of increasing salinity, siltation and pollution	None identified
	National Recovery Plan for the *Australasian Bittern* (Botaurus poiciloptilus) (DCCEEW, 2023k)	Reduced water quality	None identified
Red Knot	Approved Conservation Advice for *Calidris canutus* (Red Knot) (DCCEEW, 2024a)	• Habitat loss and degradation from environmental Pollution • Acute Pollution	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented. • Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
Great Knot	Approved Conservation Advice for *Calidris tenuirostriss* (Great Knot) (DCCEEW, 2024b)	• Habitat loss and degradation from environmental Pollution • Acute Pollution	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented. • Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.
Sharp-tailed Sandpiper	Approved Conservation Advice for *Calidris acuminata* (sharp-tailed sandpiper) (DCCEEW, 2024f)	Habitat loss, degradation and fragmentation	Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.
Terek Sandpiper	Approved Conservation Advice for *Xenus cinereus* (Terek sandpiper) (DCCEEW, 2024g)	Habitat loss, degradation and fragmentation	Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.
Eastern Bristlebird	National Recovery Plan for Eastern Bristlebird (*Dasyornis brachypterus*) (CoA, 2022))	None identified	None identified
Capricorn Yellow Chat	Approved Conservation Advice for *Epthianura crocea macgregori* (Yellow Chat) (DCCEEW, 2021a)	None identified	None identified

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
Red Goshawk	Conservation Advice for *Erythrotriorchis radiates* (Red Goshawk) (DCCEEW, 2023l)	None identified	None identified
Swift Parrot	Approved Conservation Advice for *Lathamus discolour* (Swift Parrot) (TSSC, 2016d)	None identified	None identified
	National Recovery Plan for the Swift Parrot (*Lathamus discolor*) (DCCEEW, 2024o)	None identified	None identified
Western Alaskan Bar-tailed Godwit (baueri)	Approved Conservation Advice for *Limosa lapponica baueri* (Alaskan Bar-tailed Godwit (DCCEEW, 2024c)	• Habitat loss and degradation from pollution • Acute Pollution	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented. • Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies and site managers.
Northern Siberian Bar-tailed Godwit	Approved Conservation Advice for *Limosa lapponica menzbieri* (Yakutian bar-tailed Godwit) (DCCEEW, 2024d)	• Habitat loss and degradation from pollution • Acute Pollution	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented. • Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
			foraging opportunities as identified by species experts, local studies and site managers.
Orange-bellied Parrot	National Recovery Plan for the Orange-bellied Parrot (*Neophema chrysogaster*) (DELWP, 2016)	• None identified	• None identified
Eastern Curlew	Approved Conservation Advice for *Numenius madagascariensis* (Far Eastern Curlew) (DCCEEW, 2023i)	• Habitat loss and degradation • Chronic and acute pollution	• Marine pollution: Evaluate risk of oil spill impact to nest locations and, if required, appropriate mitigation measures are implemented. • Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.
Fairy Prion (southern)	Approved Conservation Advice for *Pachyptila turtur subantartica* (Fairy Prion Southern) (TSSC, 2015g)	None identified	None identified
Australian Painted Snipe	Approved Conservation Advice for *Rostratula australis* (Australian Painted Snipe) (DSEWPaC, 2013c)	None identified	None identified
	National Recovery Plan for the Australian Painted Snip (*Rostratula australis*)	None identified	None identified

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
	(DCCEEW, 2022c)		
Ruddy Turnstone	Conservation Advice for *Arenaria interpres* (ruddy turnstone) (DCCEEW, 2024h)	• Habitat loss, degradation and fragmentation • Acute pollution	• Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers.
Latham's Snipe	Conservation Advice for *Gallinago hardwickii* (Latham's snipe) (DCCEEW, 2024i)	None identified	None identified
Black-tailed Godwit	Conservation Advice for *Limosa limosa* (black-tailed godwit). (DCCEEW, 2024j)	• Habitat loss, degradation and fragmentation • Acute pollution	• Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers. • None identified
Common Greenshank	Conservation Advice for *Tringa nebularia* (common greenshank) (DCCEEW, 2024k)	• Habitat loss, degradation and fragmentation • Acute pollution	• Ensure that future development projects avoid any activities that disproportionately affect the upper tidal flats and/or areas providing major foraging opportunities as identified by species experts, local studies, and site managers. • None identified
King Island Brown Thornbill	Conservation Advice for *Acanthiza pusilla magnirostris* (King Island brown thornbill) (DCCEEW, 2023c)	None identified	None identified

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
	King Island Biodiversity Management Plan (DPIPWE, 2012)	None identified	None identified
King Island Scrubtit	Conservation Advice for *Acanthornis magna greeniana* (King Island scrubtit) (DCCEEW, 2023d)	None identified	None identified
	King Island Biodiversity Management Plan (DPIPWE, 2012)	None identified	None identified
Regent Honeyeater	National Recovery Plan for the Regent Honeyeater (*Anthochaera phrygia*) (DoE, 2016)	None identified	None identified
	Conservation Advice *Anthochaera phrygia (*regent honeyeater) (DoE, 2015e)	None identified	None identified
Southern Whiteface	Conservation Advice for *Aphelocephala leucopsis* (southern whiteface) (DCCEEW, 2023e)	None identified	None identified
Gang-gang Cockatoo	Conservation Advice for *Callocephalon fimbriatum* (Gang-gang Cockatoo) (DAWE, 2022)	None identified	None identified
South-eastern Red-tailed Black-Cockatoo	National Recovery Plan for the South-Eastern Red-tailed Black-Cockatoo (*Calyptorhynchus banksii graptogyne*) (CoA, 2007)	None identified	None identified

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
Brown Treecreeper	Conservation Advice for *Climacteris picumnus victoriae* (brown treecreeper (south-eastern)) (DCCEEW, 2022d)	None identified	None identified
Grey Falcon	Conservation Advice *Falco hypoleucos* (Grey Falcon) (TSSC, 2020a)	None identified	None identified
Painted Honeyeater	Conservation Advice *Grantiella picta* (painted honeyeater) (DoE, 2015f)	None identified	None identified
	National Recovery Plan for the Painted Honeyeater (*Grantiella picta*) (DAWE, 2021)	None identified	None identified
Malleefowl	National Recovery Plan for Malleefowl (DCCEEW, 2024)	None identified	None identified
South-eastern Hooded Robin	Conservation Advice for *Melanodryas cucullata cucullata* (hooded robin (south-eastern)) (DCCEEW, 2023g)	None identified	None identified
Plains-wanderer	Conservation Advice *Pedionomus torquatus* (plains-wanderer) (TSSC, 2015n)	None identified	None identified
	National Recovery Plan for the Plains-wanderer (*Pedionomus torquatus*) (Commonwealth of Australia, 2016)	None identified	None identified

Species	Conservation Advice/Recovery Plan	Bass Strait	Gippsland
Green Rosella (King Island)	Conservation Advice *Platycercus caledonicus brownii (*green rosella (King Island)) (TSSC, 2015o)	None identified	None identified
Pilotbird	Conservation Advice for *Pycnoptilus floccosus* (Pilotbird) (DAWE, 2022a)	None identified	None identified
Diamond Firetail	Conservation Advice for *Stagonopleura guttata* (diamond firetail) (DCCEEW, 2023h)	None identified	None identified
Masked Owl (Tasmania)	Conservation Advice for *Tyto novaehollandiae castanops* (Tasmanian Masked Owl) (TSSC, 2010b)	None identified	None identified

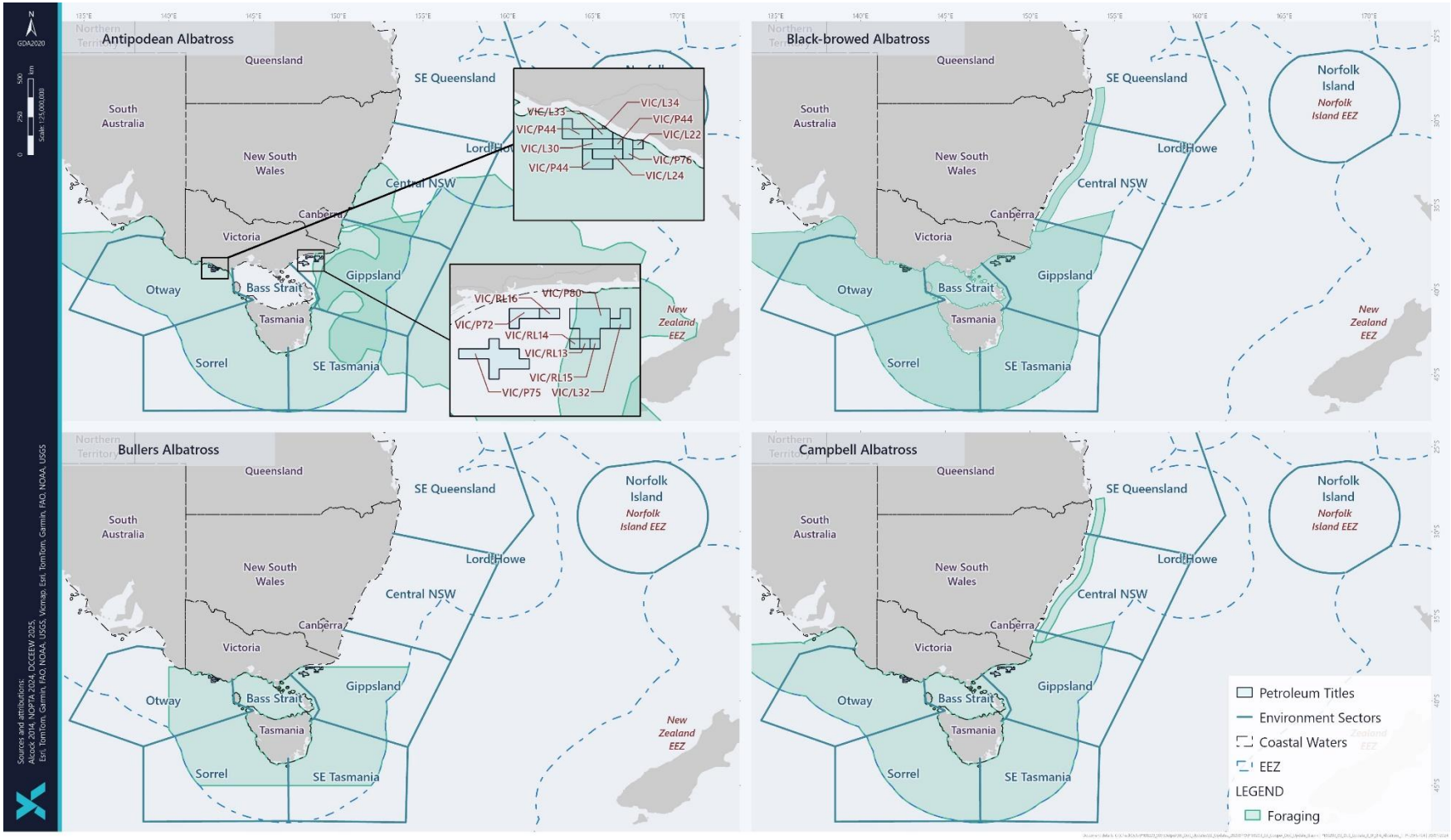


Figure 3-28: BIAs for the Antipodean Albatross, Black-browed Albatross, Buller's Albatross, and Campbell Albatross

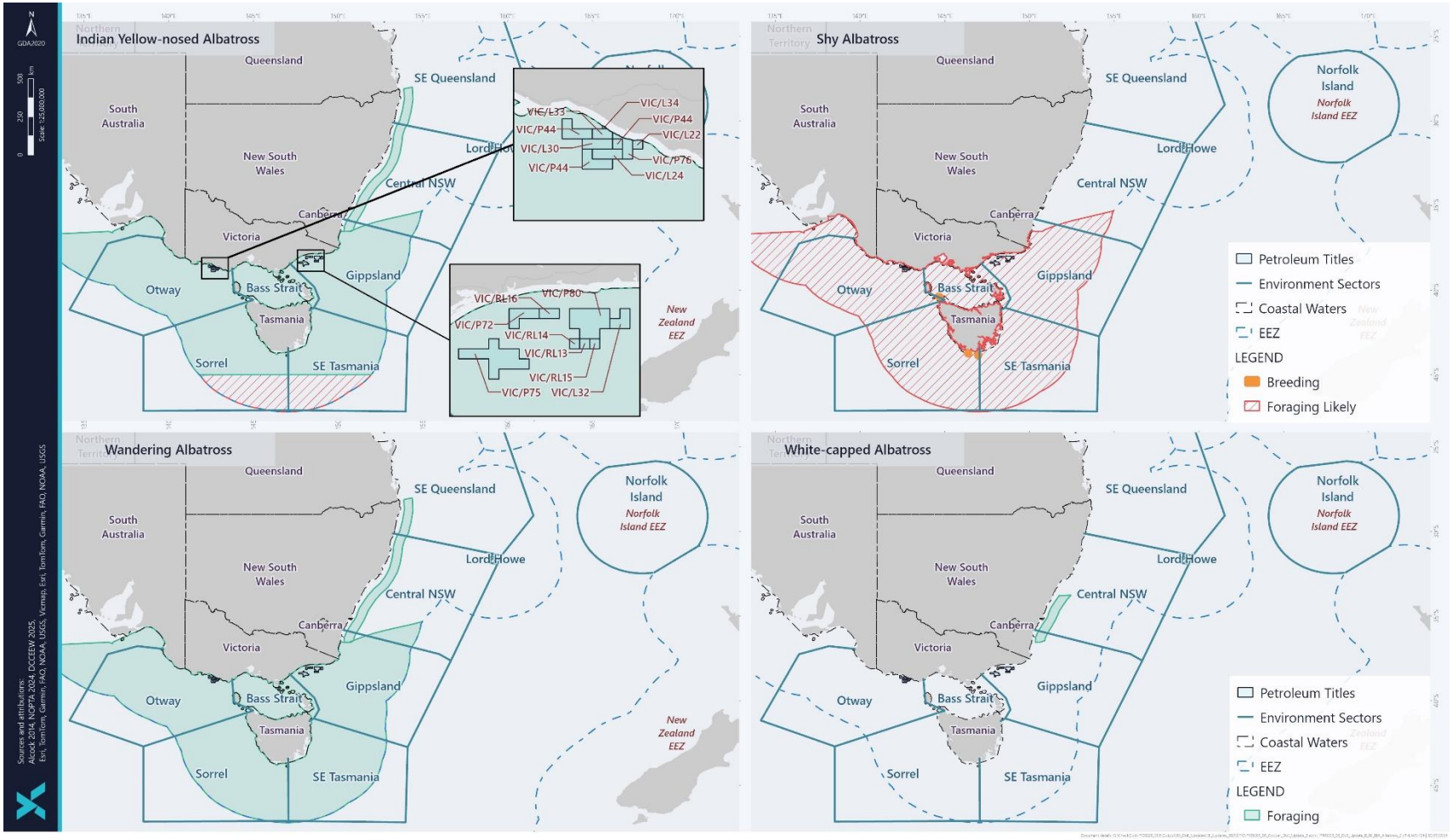


Figure 3-29: BIAs for the Indian Yellow-nosed Albatross, Wandering Albatross, Shy Albatross, and White-capped Albatross

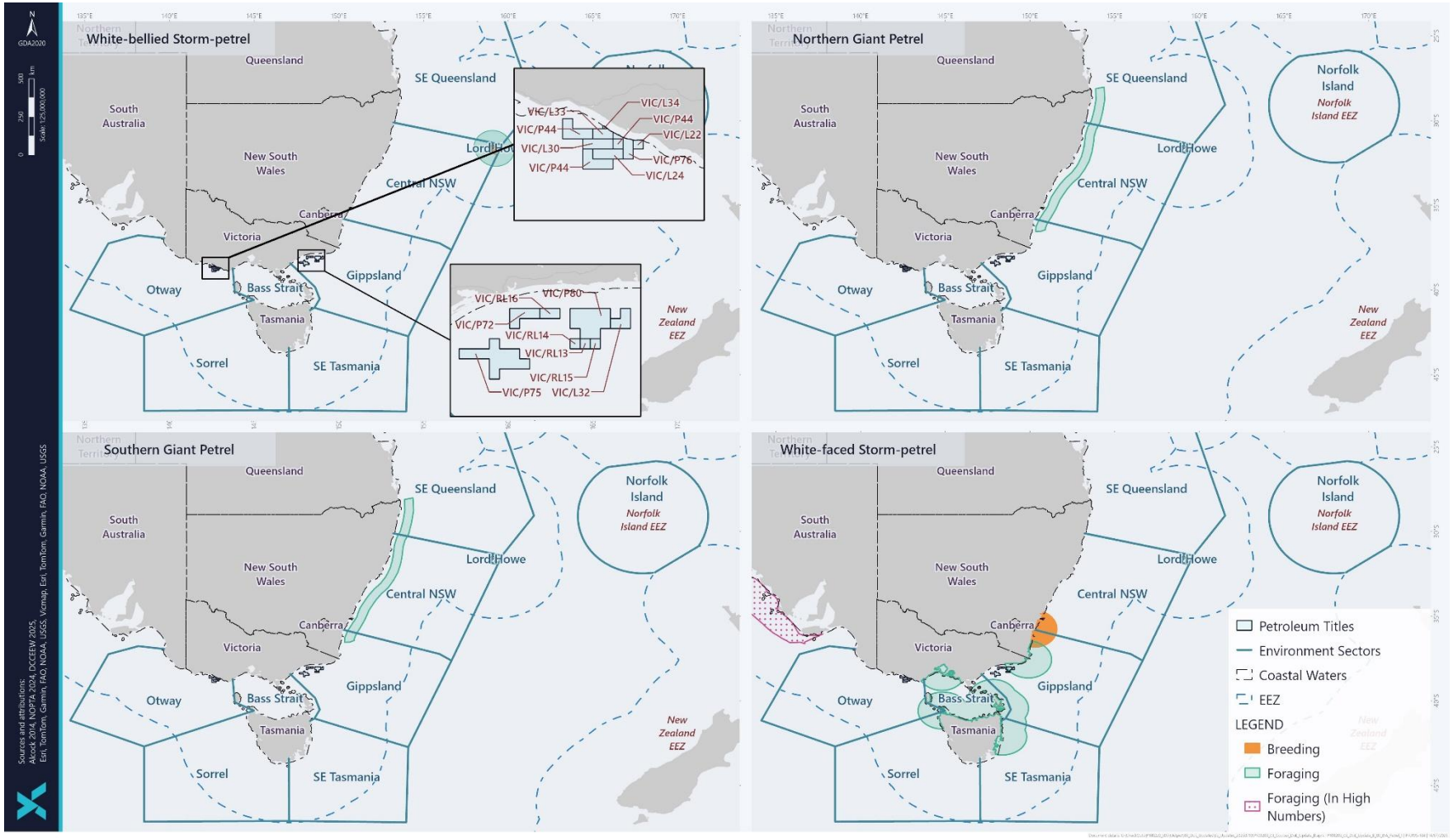


Figure 3-30: BIAs for the White-bellied Storm Petrel, Northern Giant Petrel, Southern Giant Petrel, and White-faced Petrel

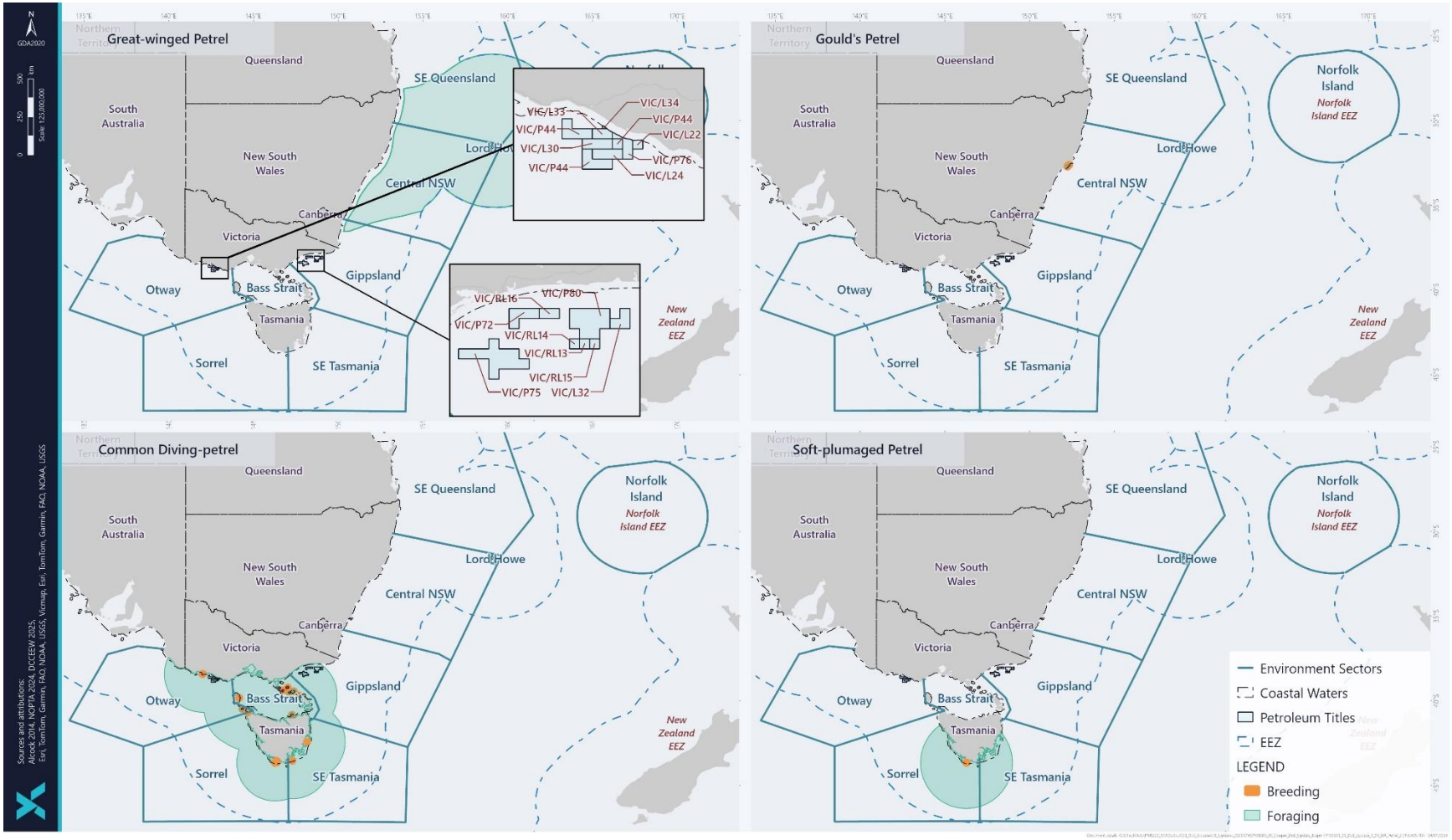


Figure 3-31: BIAs for the Great-winged Petrel, Gould's Petrel, Common Diving Petrel, and Soft-plumage Petrel

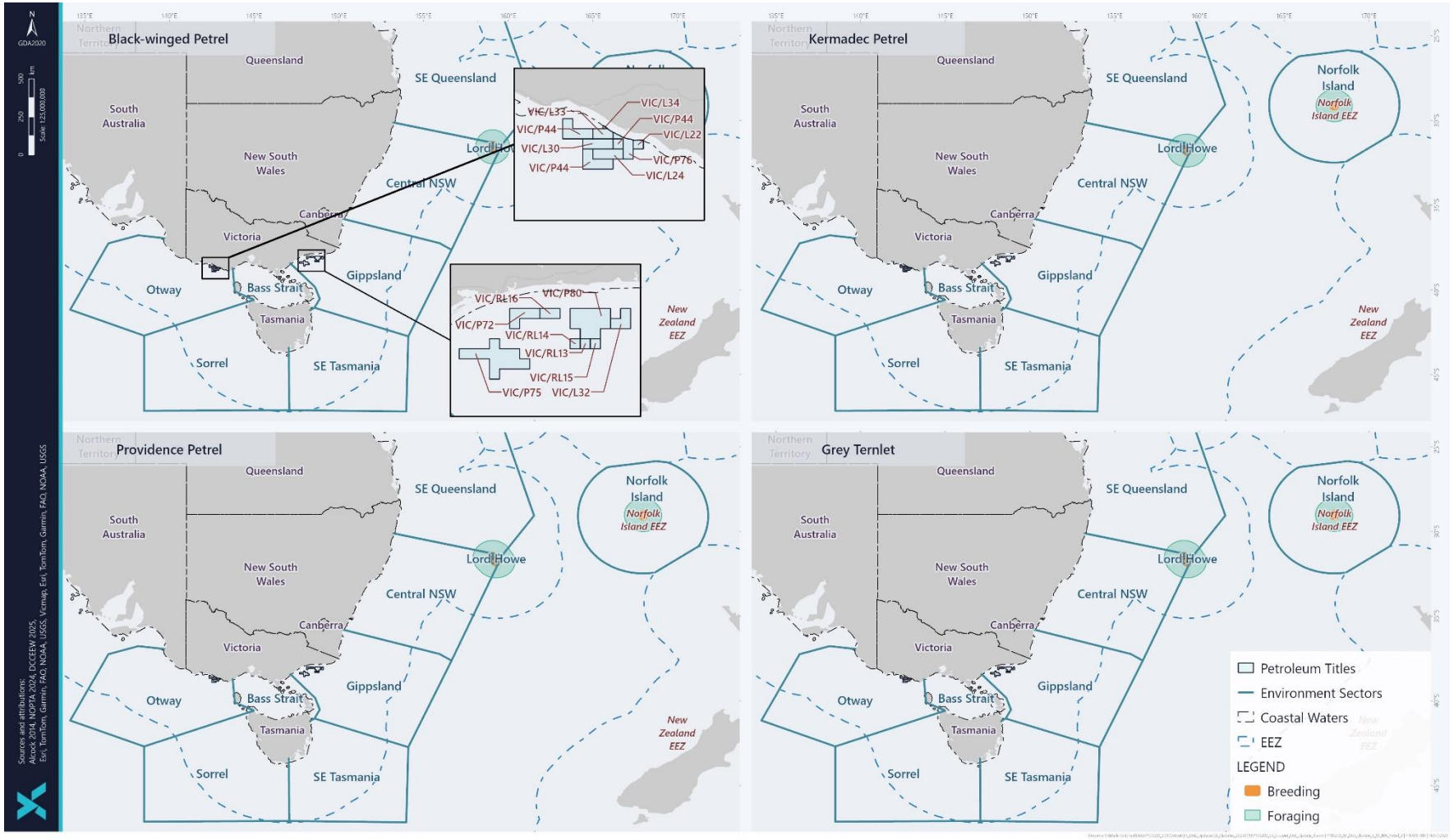


Figure 3-32: BIAs for the Black-winged Petrel, Kermadec Petrel, Providence Petrel, and Grey Ternlet

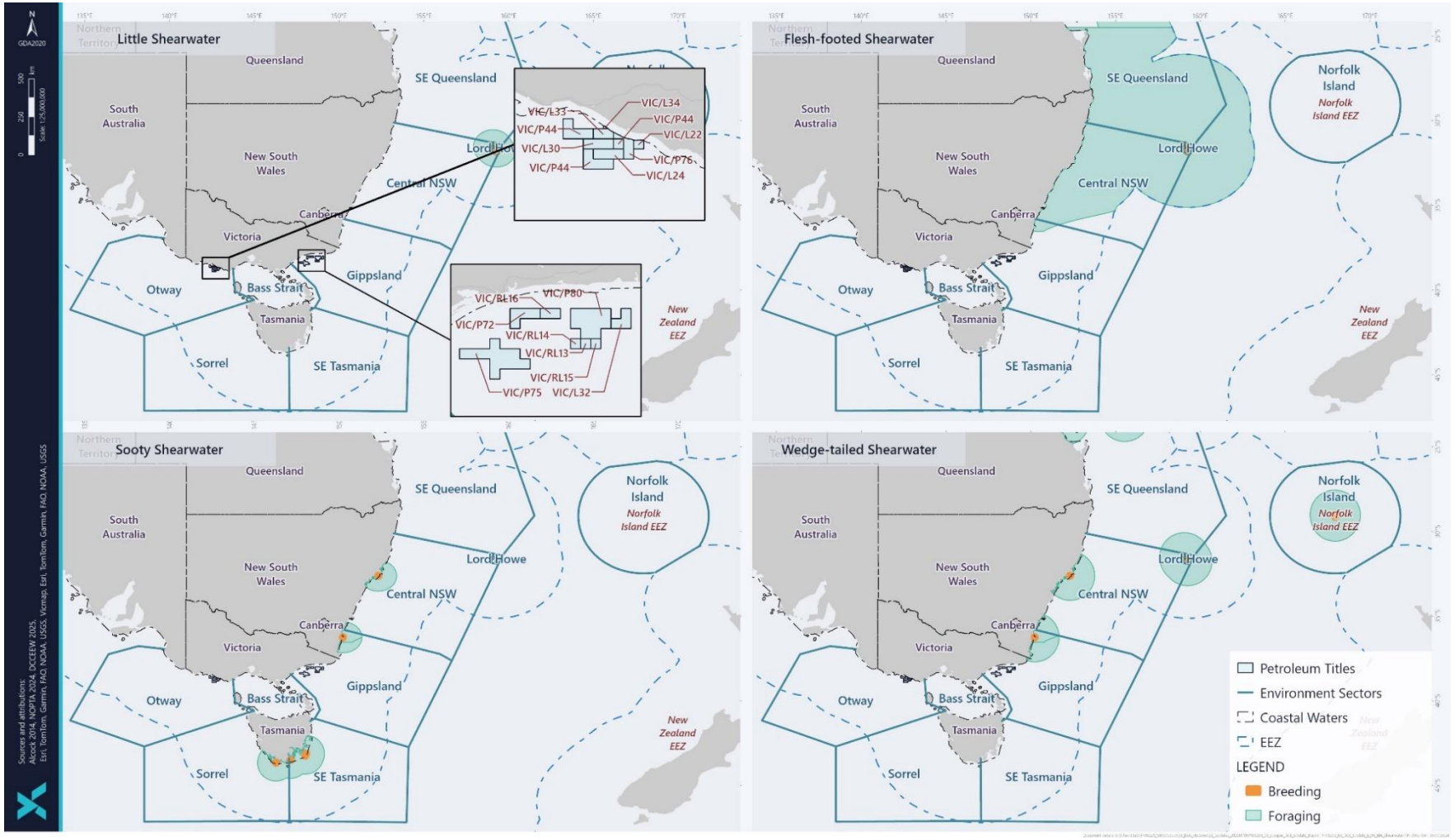


Figure 3-33: BIAs for the Little Shearwater, Flesh-footed Shearwater, Sooty Shearwater, and Wedge-tailed Shearwater

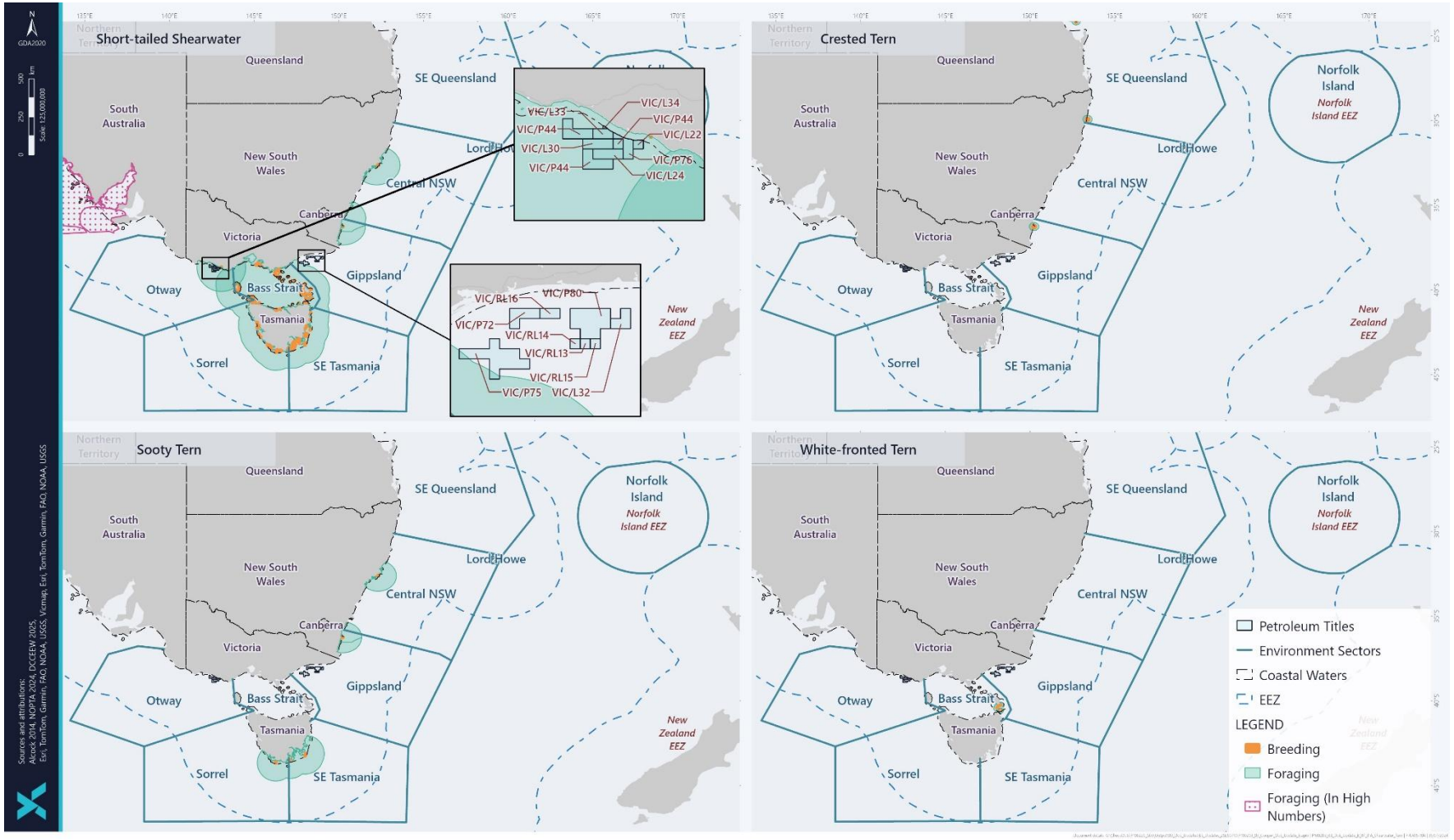


Figure 3-34: BIAs for the Short-tailed Shearwater, Crested Tern, Sooty Tern, White-Fronted Tern

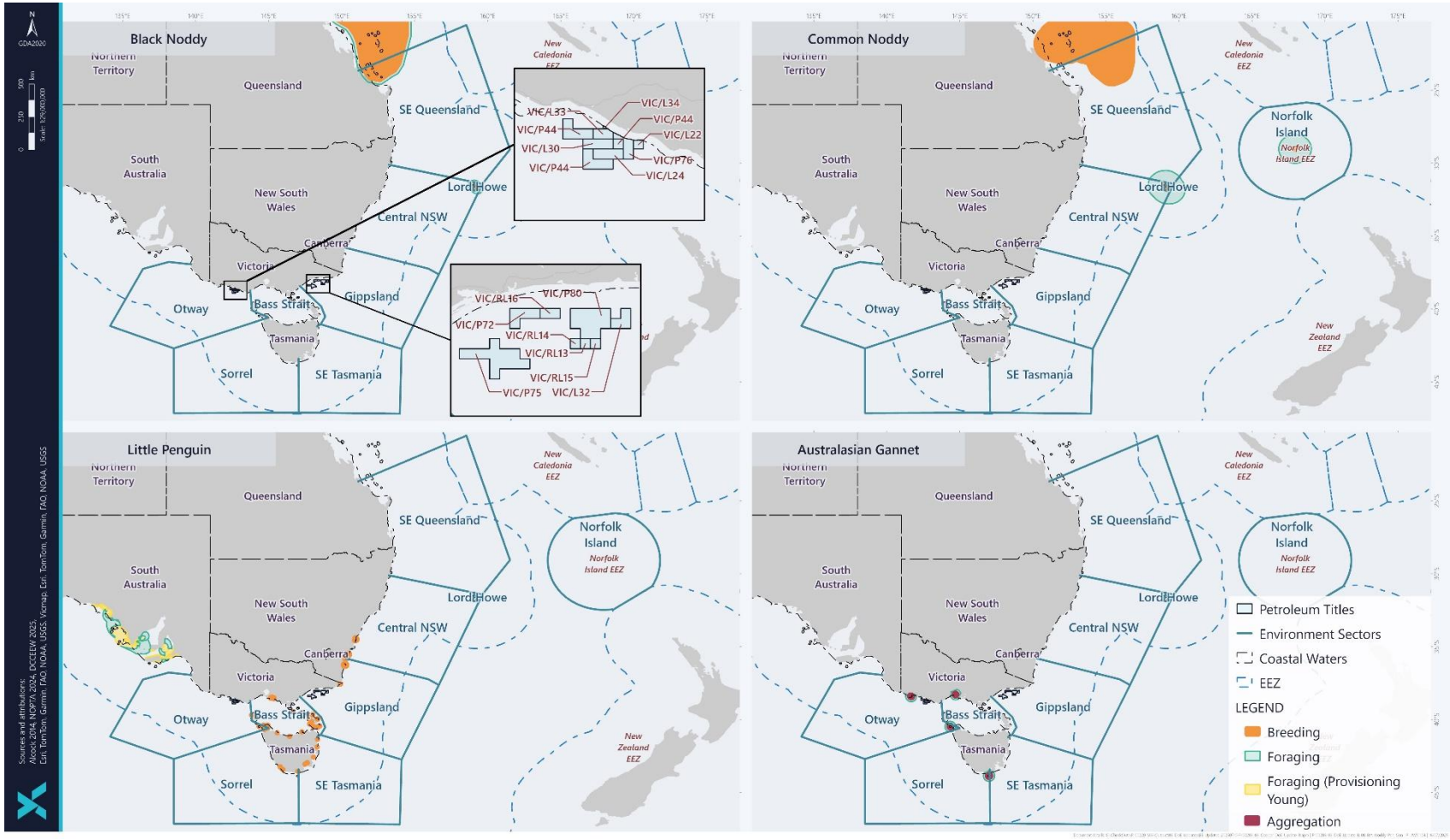


Figure 3-35: BIAs for the Black Noddy, Common Noddy, Little Penguin and Australasian Gannet

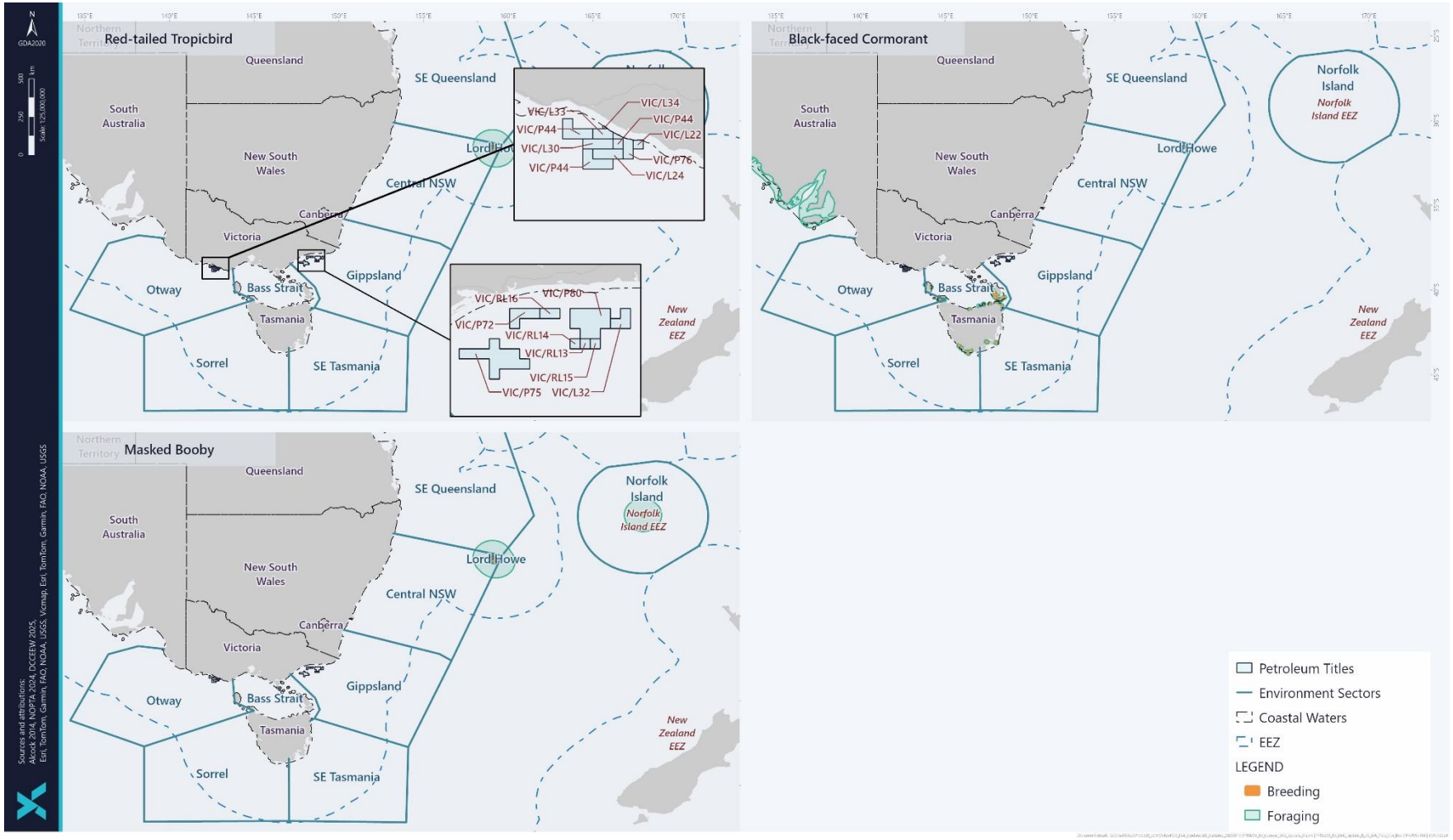


Figure 3-36: BIAs for the Red-tailed Tropicbird, Black-faced Cormorant, and Masked Booby

3.13 Marine Invertebrates

Marine invertebrates comprise a variety of different organisms and occur from the sea surface to the seafloor and into the substrate. Within the south-east marine region shelf rocky reefs, and shelf rocky reefs and hard substrates, are identified as a key ecological features (refer Section 4.6) which provides habitat and shelter for fish and are important for aggregations of biodiversity and enhanced productivity by increasing the structural diversity of shelf ecosystems (DCCEEW, 2023l; Young et al., 2022).

Their size ranges from tiny, microscopic organisms to several metres in length. In addition to their inherent ecological value, some marine invertebrates are commercially important, e.g., oysters, prawns, and scallops, whilst others, such as corals, can be a major attraction for tourists. The most common marine invertebrates include:

- porifera (sponges)
- cnidarians (e.g. hydroids, anemones, jellyfish)
- marine worms
- arthropods (e.g. sea spiders)
- crustaceans (e.g., rock lobster, krill)
- molluscs (e.g. nudibranch, sea slugs, mussels, oysters, squid, octopus)
- echinoderms (e.g. sea stars, sea urchins, sea cucumbers)
- hemichordates (e.g. acorn worms)
- bryozoans (lophophorates - microscopic filter feeders).

Studies by the Museum of Victoria (Wilson and Poore, 1987; Poore et al., 1985) found that invertebrate diversity was high in southern Australian waters, although the distribution of species was patchy, with little evidence of any distinct biogeographic regions. Shallower inshore sediment sampling by Parry et al. (1990) also showed high diversity and patchy distribution. However, in these areas, crustaceans, polychaetes and molluscs were dominant.

In 1998 the Department of Natural Resources and Environment commissioned a survey of infauna along the entire length of the open Victorian coast (the '*Victorian coastal benthos study*') (Heislers and Parry, 2007). The survey collected samples at three depths (10 m, 20 m and 40 m) on 50 transects running perpendicular to the coast. Data from the survey provided evidence that species diversity in Bass Strait was higher than that recorded in other regions, with a particular region of elevation species diversity in East Gippsland (Heislers and Parry, 2007). Crustaceans (particularly amphipods) were the dominant taxa in each depth class, representing more than half of the twenty most abundant families; followed by polychaetes. There was no clear difference in the representation of families between bioregions (e.g. between Otway and Two-fold Shelf regions) (Heislers and Parry, 2007). The total number of species per site increased with depth (Heislers and Parry, 2007).

Habitat characterisation surveys along the Patricia-Baleen pipeline route (OMV Australia, 2002) showed a sand and shell/rubble seabed, with sparse epibiotic (e.g. sponges) coverage, with no reef systems (OMV Australia, 2002).

A video survey undertaken along the Patricia-Baleen pipeline in 2003 (CEE, 2003) indicates that there are four general habitat associations on the seabed along the pipeline route. Large epibiota are very

sparse, with extensive areas of sandy and shell/rubble seabed being devoid of large epibiota except for introduced screw shells and sponges. The biota identified are described below:

- Large patches of seabed comprised of old large shells, predominantly bivalves and scallops, with New Zealand screw shells present in large numbers.
- Sponge garden – a small and distinct area of large sponges and bryozoans occurs at about 50 m water depth. The sponges varied in form and colour and included fans, spheres, massives, cups and fingers. Bryozoans included lace-like corals, concertina fans, perforated rigid sheets and fern-like branches. These associations indicate that although the seabed is comprised predominantly of sand and shell grit, it is stable enough to allow these associations to grow. Schools of jackass morwong, butterfly perch and individual gurnard and leatherjackets were attracted to the sponge garden.

There is limited information on the location, distribution and dispersion, or species composition of the epibenthic fauna in Gippsland Basin region. However, records demonstrate that within the Bass Strait (eastern Gippsland Basin) region, beyond the 'mud line' greater than ~110 m, a muddy sand biotope dominates that is recognised as quite different to the upper inner shelf areas in the region (Beaman et al., 2005).

Epifauna within the vicinity of the BMG field is expected to be sparse compared to nearshore regions given the water depths, coverage of silty sand and limited availability of hard substrate. During habitat surveys conducted within the BMG field (Ierodiaconou et al, 2021), observed epibenthic communities on the surface of subsea structures to consist primarily of sand, biofilm (thin layer of epibenthos) and shells along flowlines, with the presence of some black corals/octocorals and encrusting sponges observed on well infrastructure. Black/octocorals, bryozoans and ascidians were not observed on flowlines. Along flowlines, burrows from infauna biota in mid shelf muddy sands were identified indicating extensive bioturbation.

A past survey of the Casino Henry Netherby Development found seabed communities consistent with this description with observations at 60 to 70 m depths showing a patchy presence of epifauna such as bryozoans, gorgonian cnidarians and sponges with observed colonisation of existing infrastructure (Ramboll, 2020).

In 2022, Parks Victoria published results of predictive modelling of fish species richness offshore Victorian coastline; the modelling inputs included physical and biological attributes of the coastline, with reef and associated invertebrate communities strongly linked to high fish species richness (Young et al., 2022).

Ierodiaconou et al (2020) identified commercially fished species including arrow squid (*Nototodarus gouldi),* Balmain bug (*Ibacus peronii*), Cuttlefish (*Sepiidae spp.),* red prawn (*Haliporoides sibogae*), Tasmanian giant crab (*Pseudocarcinus gigas*) and octopus (*Octopodiadea spp.).*

Commercially important invertebrates include lobsters, prawns, scallop species (see Section 5.1).

There is one threatened echinoderm species (or species habitat) that may occur within the Environmental Sectors (Table 3-18 and Table 3-19). The Tasmanian live-bearing seastar inhabits sheltered waters in the upper intertidal zone of rocky areas of southeast Tasmania, with an estimated population size of at least 350,000 individuals within 13 isolated populations (TSSC, 2009c). The species is listed as vulnerable due to its restricted geographic distribution.

The PMST identified a number of crustaceans species that may occur within the Environmental Sectors, however, most of them occur in freshwater habitats. Only two species may occur in habitats that may have connection with the sea: Furneaux burrowing crayfish and the Orbost Spiny Crayfish (Table 3-18 and Table 3-19).

3.13.1 Porifera

Porifera, or sponges, are sessile, multicellular organisms that have bodies full of pores and channels allowing water to circulate through the organism and provide food and oxygen and removes wastes. The flow is actively generated by the beating of flagella and filter bacteria and phytoplankton from the water which passes through them (Bond and Harris, 1988). Porifera flourish in waters where water movement is strong (Butler et al., 2002). Sponges do not have nervous, digestive or circulatory systems and reproduce by asexual and sexual means. Increasing temperature is generally accepted as a major environmental factor regulating the onset of reproduction activity particularly in regions of large seasonal change (spring / summer) (Fromont, 1993). Sponges are efficient colonisers of marine hard surfaces although they will not typically colonise a newly cleared surface as rapidly as some other groups (e.g. bryozoans). Once established sponges are effective competitors in retaining living space through asexual reproduction and by using chemicals to deter competitors and predators (Butler et al., 2002).

Video transects and sediment samples within and adjacent to the Casino Henry Netherby Development saw scattered areas of hard ground supporting patchy areas of abundant epibiota such as sponges (Ramboll, 2020). While sponges were present, they were not highly abundant or morphological diverse as a taxonomic group to be considered as a sponge bed, rather sponges were interspersed throughout the patchy epifaunal covering which included other invertebrate species such as bryozoans and hydroids (Ramboll, 2020).

3.13.2 Hydrozoans

Species are found in almost every marine habitat type except heavy surf zones. They are most abundant and diverse in warm shallow waters likely reflecting food abundance.

Most species have a planktonic larval stage which is pelagic before settling onto benthic substrates and developing a polyp, A founding polyp produced new polyps by budding. In many colonies, polyps are polymorphic with different structures reflecting different functions. Polyps produce “adult” sexually-reproducing medusae which are free-swimming and release sperm and eggs in the water (broadcast spawners) where fertilisation occurs. Colonies are usually sessile benthic, but some notably the siphonophores are pelagic floaters. Most hydrozoans are predators or filter-feeders. Filter feeders trap small zooplankton; pelagic hydrozoans show selectivity in prey types taking mainly fish larvae, soft bodied invertebrates or micro-crustaceans. Predators can include snails, worms, fish and crustaceans (University of Michigan, 2017).

Video transects and sediment samples within and adjacent to the Casino Henry Netherby Development saw scattered areas of hard ground supporting patchy areas of abundant epibiota such as colonial hydroids (Ramboll, 2020).

3.13.3 Bryozoans

Bryozoans are sessile, aquatic invertebrate filter feeding animals which attach to hard substrates and form lace-like colonies. They have no respiratory organs, heart, or blood vessels. Instead, they absorb oxygen and eliminate carbon dioxide through the body wall. Colonies of bryozoans are started by a single individual that, after its larval existence, settles onto a substrate and begins to reproduce asexually (by budding) after settlement. Bryozoans are hermaphrodites and fertilisation can be external in the water column or internal with embryos brooded in the body (as do ascidians) fertilised with sperm brought in on the feeding current. The larvae which are hatched are then released and swim but do not feed; they swim towards the light then after a few hours swim down

to the sea floor to colonise. For species which do not brood but release eggs, fertilised eggs become part of the plankton stream for ~2 months until they are large enough to descend and start a new colony (Earthlife, 2014). Temperature controls all aspects of bryozoan life. In spring, rising water temperatures and increased intensity of light stimulate phytoplankton growth which initiates active budding in bryozoans and to some degree sexual reproduction (Smithsonian Institute, 2014). Most bryozoans use chemicals as well as spines as a predator deterrent and thus have only relatively few specialised predators (Butler et al., 2002).

Video transects and sediment samples within and adjacent to the Casino Henry Netherby Development saw scattered areas of hard ground supporting patchy areas of abundant epibiota such as bryozoans which were a common species observed (Ramboll, 2020).

3.13.4 Molluscs

3.13.4.1 Gastropods

Univalve gastropods can live up to 20 years growing to a shell length of over 200 mm. **Abalone** feed on algae and are prey for crabs, rock lobster, octopi, fish and rays. Blacklip abalone is the predominant species fished along the Victorian coastline area although greenlip abalone is also present. Blacklip abalone is found in shallow depths between 5-20 m and can be found in caves, on crevices and on sheltered reefs. Greenlip abalone is found in shallow reef habitats (5-40 m) and rough water at the base of steep granite cliffs. Abalone is a broadcast spawner; the species spawns from spring to autumn (Kailola et al., 1993).

Both blacklip and green abalone are target species of state fisheries including the Victorian Abalone Fishery. Habitat suitability for the blacklip abalone was mapped along the western Victorian coastline in an attempt to capture an effective footprint of the Victorian Abalone Fishery (Ierodiaconou et al., 2014). Results indicated that highly suitable regions were characterised by highly rugose seafloor structure (i.e. high-profile reefs), with the most suitable areas occurring at depths of around 10 m, and a gradual decline in suitability to depths of 20 m (Ierodiaconou et al., 2014). Colonisation success was identified to likely be driven by ecological factors such as resources and competition and physical factors such as exposure to wave energy and benthic currents (Ierodiaconou et al., 2014).

3.13.4.2 Cephalopods

Cephalopods (**squid, octopus** and **cuttlefish**) are active mobile predators. Generally, cuttlefish and octopus eat crustaceans (including lobsters) living on or near the seabed while squid eat crustaceans and fish. Cephalopods have a high growth rate, their lifespan is short and there is a single reproductive season (Boyle and Rodhurst, 2005).

The species actively swim by jet propulsion and propagate by sexual reproduction. The individual size and number of eggs (released in a jelly like egg mass) during a reproductive season is variable and ranges from a few large eggs (1 million) small eggs drifting in the plankton. The incubation period is highly temperature dependent and is completed with the hatching of the larval stage which resembles a miniature adult. After breeding the adults die within a short time and in species with a highly synchronised breeding population this can result in conspicuous mass mortality (Boyle and Rodhurst, 2005).

An important commercial cephalopod within the Otway region is the **arrow squid** which is endemic to southern Australia (Koopman et al., 2018) and inhabits waters from estuaries to ocean depths of about 500 m but are most abundant over the continental shelf from 50 m to 200 m (Kailola et al.,

1993). Arrow squid are schooling and tend to aggregate near the seabed during daylight and disperse through the water column at night, migrating to the surface to feed. Arrow squid spawn throughout their distribution; spawning occurs in all months although there are 2 -3 peaks in spawning activity during the year. Peak catches and catch rates of squid have occurred during summer months, with peak catch timings moving earlier over time (February, March) particularly off Western Australia (Koopman et al., 2018). After eggs are released, they hatch within 1-2 months post fertilisation with the larvae most abundant in continental shelf waters of 50 – 200 m. Arrow squid are relatively short-lived reaching a maximum age of 12 months and are the prey of a number of fish species (Kailola et al., 1993).

3.13.5 Crustaceans

3.13.5.1 Rock Lobster

Rock lobsters live in a variety of reef habitats on the continental shelf in water depths between 1 and 200 m. In Victoria, the abundance of rock lobsters reduces from west to east reflecting a decreasing area of suitable rocky reef habitat (VFA, 2024a). The species is carnivorous and eats molluscs, small crustaceans, echinoderms and other benthic invertebrates. Major predators of the rock lobster are octopus, gummy shark, southern rock cod, flathead, wrasse, morwongs and rock ling (Kailola et al., 1993).

The lifecycle of the southern rock lobster is complex – after mating in autumn, fertilized eggs are carried under the tail of the female for approximately three months before hatching typically between September and November / December (DPI, 2009; Kailola et al., 1993). Egg hatching typically occurs earlier in the southern waters of the species distribution (Kailola et al., 1993). A female lobster with a carapace length of 124 mm can carry up to 400,000 eggs (Kailola et al., 1993).

The eggs hatch into larvae (or phyllosoma) which undergo eleven developmental stages over a period of 12-24 months in pelagic environments while being dispersed and distributed by oceanic currents to distances at least 1,100 km from land (Kailola et al., 1993). Given the long-lived nature of the SRL larval phase, there can be up to two cohorts of larvae present in shelf waters at any one time. Larval distribution is initially in shelf waters with currents quickly dispersing larvae along shore and into offshore waters. Mixing of larvae and loss of regional integrity of larvae is prevalent in southeast South Australia, Tasmania and eastern Victoria given the net drift east. Additionally, phyllosoma are found over a variety of water depths and are assumed to have no affective horizontal swimming capacity in the marine environment (Bruce et al., 2007). Phyllosoma are observed to rise to surface waters (~0-20 m) during night hours and sink during the daylight hours (~50-200 m) (Bruce et al., 2007).

During metamorphosis juvenile rock lobsters shift from a planktonic (phyllosoma) to a benthic existence (termed puerulus) (DPI, 2009) settling into coastal and shelf habitats. Historically the southern rock lobster was thought to be a highly resident species, remaining in one area for extensive periods of time. Movement patterns of the species in Victorian waters were analysed and found that the region and water depth were the greatest drives of southern rock lobster movement (Skeer et al., 2020). Results suggest that the movement of individuals off the Warrnambool and Apollo Bay regions (within close proximity to the Casino Henry Netherby Development) was primarily in the offshore direction towards deeper water (Skeer et al., 2020). However, a maximum depth range of 50 – 60 m was observed with few recaptures observed beyond this (Skeer et al., 2020). The southern rock lobster is the key target species of a number of state fisheries including the Victorian Rock Lobster Fishery. The most productive fishing grounds for the southern rick lobster

occur in the waters adjacent to South Australia which support the largest fishery for the species, followed by Tasmania and then Victoria (VFA, 2024a).

3.13.5.2 Giant Crab

The giant crab occurs in oceanic waters of southern Australia along the continental shelf, typically found in water depths between 140 and 270 m (Levings et al., 2001). The giant crab movement is dependent on water temperature. This species lacks internal temperature control mechanisms and lives where the steep terrain of the continental margin offers easy access to a cooler or a warmer environment (Levings et al., 2001). Their growth and reproduction are linked with the food resources and physical character of where they live.

The giant crab reproduces annually. Females produce eggs in April/May and will carry eggs until October/November when they are released. Females carry approximately 1.5 million eggs on average (IMAS, 2023). Dispersal of larvae is considered to be localised due to the short planktonic phase of the species lifecycle. Survival of larvae may be dependent on factors such as prevailing currents, vertical migration (movement through the depths of the water column), temperature, light intensity, gravity, change in pressure, predator pressures, food availability, thermoclines and salinity (IMAS, 2023). The giant crab is the key target species of a number of state fisheries including the Victorian Giant Crab Fishery.

3.13.5.3 Annelids

Annelids are a large phylum of segmented worms, including polychaetes, clitellates, ragworms, earthworms and leeches.

Polychaetes are brightly coloured segmented worms. Most are less than 10 cm long, although they can range from 1 mm to 3 m and include forms such as sand worms, tube worms and clam worms. They are found in all habitats from the supra-littoral to the deepest parts of the ocean. Some such as the feather-duster worms are sedentary, living in tubes buried in sand/mud and feed by trapping food particles in mucus or by ciliary action. Others such as the clam worm are active mobile predators which capture prey in jaws (University of Michigan, 2017).

Most polychaetes have separate sexes - male and female and the sperm and eggs are released into the surrounding water through ducts or openings. The fertilised eggs hatch into larvae, which float among the plankton, and eventually metamorphose into the adult form by adding segments (MESA, 2015b).

Video transects and sediment samples within and adjacent to the Casino Henry Netherby Development saw scattered areas of hard ground supporting patchy areas of abundant epibiota (Ramboll, 2020). Polychaete tubules were visible in one sediment sample.

3.13.5.4 Ascidians

All ascidians (commonly known as sea squirts) are sessile, sac-like marine invertebrate filter feeders and include both solitary and colonial species. Ascidians occur from intertidal to deep (>2,000 m) subtidal waters and can occur in high concentrations (Butler et al., 2017). A study conducted on the distribution of ascidians along Victoria's coast at identified rocky reef locations, which identified 37 different species found in the intertidal environment (Bathie and Pett, 2020).

The species has a digestive, circulatory and nervous system however lacks any special sensory organs. Reproduction includes both asexual budding and sexual reproduction with a free-living larval

stage. The species are hermaphrodites, and fertilisation can be external with development in the water column (solitary species) or internal with embryos brooded in the body (colonial species).

Solitary larvae are free-swimming for periods of 1-24 hours and prior to hatching have been floating free in the water for up to 3 days. They are therefore subject to current dispersal which contributes to gene flow and removes risks of isolation. The colonial species are seldom free swimming for more than one hour and attach to substrates rapidly. In temperate and cold seas, breeding is usually seasonal and restricted to the warmer season but in tropical waters it may continue throughout the year (Shenkar, 2008). Only limited information on predators is available, but they include some fish, molluscs and sea-stars. While some species are known to contain toxins which deter predators and settling larvae, most solitary species tough tests and colonial species a great ability to rapidly repair any damage through vegetative growth (Butler et al., 2002).

Table 3-18: Marine Invertebrate Species or Species Habitat that May Occur within the Environmental Sectors

		Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plan	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Echinoderms															
Parvulastra vivipara	Tasmanian Live-bearing Seastar	V				[1]				LO	LO				
Crustacean															
Engaeus martigener	Furneaux Burrowing Crayfish	E				[2]		KO							
Euastacus diversus	Orbost Spiny Crayfish	E				[3]		KO							
Threatened Species: *V* *Vulnerable* *E* *Endangered*	Type of Presence: MO Species of species habitat may occur within area LO Species or species habitat likely to occur within area						Plan Reference: [1] Approved Conservation Advice for *Patiriella vivipara* (Tasmanian Live-bearing Seastar) (TSSC, 2009c) [2] Approved Conservation Advice for *Engaeus martigener* (Furneaux burrowing crayfish) (TSSC, 2016h) [3] Conservation Advice for *Euastacus diversus* (Orbost spiny crayfish) (DCCEEW, 2023r)							

Table 3-19: Marine Invertebrate Threatened Species Management Advice relevant to Petroleum Activities within Applicable Amplitude Energy Operating Areas.

Species	Conservation Advice/Recovery Plan	Key Threats relevant to Petroleum Activities	Management Actions relevant to activities within applicable Amplitude operating areas
• Tasmanian Live-bearing Seastar	Approved Conservation Advice for *Patiriella vivipara* (Tasmanian Live-bearing Seastar) (TSSC, 2009c)	• Habitat modification and destruction	• **Marine pollution:** Evaluate risk of oil spill impact and, if required, appropriate mitigation measures are implemented

3.14 Fish and Sharks

There are 22 fish, 16 shark and ray, and 75 syngnathid species (or species habitat) that may occur within the Environmental Sectors; this includes species classified as threatened and migratory (Table 3-20). A list of the relevant conservation advice and/or recovery plans is also provided in Table 3-20, with relevant management actions in Table 3-21. The type of presence varies between species and location, and includes important behaviours (e.g. foraging, breeding) for some species (Table 3-20).

Three fish species identified in the PMST Reports are freshwater species, eastern dwarf galaxias, Yarra pygmy perch and the variegated pygmy perch. These species are located in freshwater habitats outside of the spatial extent potentially affected by the activity and are not discussed further.

Although all commercially important species may not be EPBC listed they provide important economic services to ecological and social environment. Commercially important fish species which may occur within the Environmental Sectors are described in Section 3.14.10.

Note that the seabed in the vicinity of Amplitude Energy assets is predominantly sediment; and the absence of any reef structures is expected to reduce the likelihood of fish species (threatened or commercial) to aggregate in the immediate areas. That is, any presence of fish species within the immediate area is expected to be transitory.

3.14.1 Sharks and Rays

In Australia, the **grey nurse shark** (east coast population) primarily has an inshore coastal distribution in sub-tropical to cool temperate waters on the continental shelf (DoE, 2014). The east coast population covers a range extending from the Capricornia coast (central Queensland) to Narooma in southern New South Wales (DoE, 2014), and is listed as critically endangered (TSSC, 2001). The grey nurse shark generally occurs as solitary individuals or in small schools; larger aggregations of individuals may occur for courtship and mating (DoE, 2014). Preferred habitat for grey nurse sharks is inshore rocky reefs or islands, generally aggregating near the seabed in water depths of 10 - 40m in deep sandy or gravel filled gutters, or in rocky caves border (DoE, 2014). A number of key aggregation sites and habitat critical for the survival of the grey nurse shark have been identified within the Environmental Sectors (Table 3-21). The grey nurse shark migrates within its range, making seasonal north–south movements to form aggregations at critical habitat sites, thought to be related to breeding (DEE, 2017i). The precise timing of mating and pupping in Australian waters is unknown; however, in South Africa mating occurs between late-October and late-November (DEE, 2017i). A BIA for breeding and distribution has been identified for the grey nurse shark along the east coast of Australia (Figure 3-39).

The **white shark** has a range extending from central Queensland, around the south coast, to north-west Western Australia (DSEWPaC, 2013a). The white shark is primarily found on the continental shelf and coastal waters, including inshore waters around oceanic islands. Though the Great White Shark is not evenly distributed throughout its range, the entire South-east Marine Region is considered a BIA for the species with observations more frequent in some areas, including those around fur-seal or sea-lion colonies (DSEWPaC, 2013a). In the South-east Marine Region, waters surrounding pinniped colonies are considered BIAs for foraging for the species. Juvenile sharks appear to aggregate seasonally in key areas, including Wilsons Promontory (Victoria), and the coast between Newcastle and Forster (New South Wales) (DSEWPaC, 2013a). Recent studies have found that juvenile white sharks (<3m) occupy estuaries at Port Stephens, New South Wales and Corner Inlet, Victoria during October to January (Harasti et al., 2017). A BIA for breeding (nursery ground) has been established in the coastal region extending east from Wilsons Promontory; and a BIA for

aggregation off the Newcastle coast (Figure 3-38). The great white shark moves seasonally along the south and east Australian coasts, moving northerly along the coast during autumn and winter, and returning to southern Australian waters by early summer. The white shark is not known to form and defend territories; however, its seasonal return implies a degree of site fidelity (DSEWPaC, 2013a). Key threats to the species, as listed in the Recovery Plan (DSEWPaC, 2013a) and Action Statement (DSE, 2003) are mortality from targeted fishing, accidental fishing bycatch and illegal fishing, and mortality from shark control activities (such as beach meshing and drum lining).

The **shortfin mako shark** (*Isurus oxyrinchus*) 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). The shortfin mako inhabits depths down to 600 m, with a slight trend indicating the species spend the majority of the night in shallow water, and the majority of daylight hours in deeper waters (Rogers et al., 2009). It is not normally found in waters below 16°C (RPS, 2015). Satellite tracking data for shortfin makos showed a potential for year-round occupation of the Otway, Bass Strait and Gippsland Basins (Rogers and Bailleul, 2015).

The **porbeagle shark** is a wide-ranging species that inhabits oceanic waters around the edge of the continental shelf in temperate, subarctic and subantarctic waters of the North Atlantic and Southern Hemisphere (DoE, 2025). In Australia this species typically occurs in oceanic waters between southern Queensland south to south-west Australia. The waters of Bass Strait are not known feeding, resting or reproductive grounds for the shortfin mako, although feeding may occur opportunistically where sufficient prey is present. The porbeagle shark may temporarily move into coastal waters and are known to utilises a broad vertical range of the water column diving to depths exceeding 1,300 m (DoE, 2025). This species is known to undertake seasonal migrations; however, they are not well understood. Individuals in the Southern Hemisphere are thought to give birth off New Zealand and Australia in winter (DoE, 2025). The waters of Bass Strait are not known feeding, resting or reproductive grounds for the porbeagle, although feeding may occur opportunistically where sufficient prey is present.

The **giant manta ray** is a migratory species that is found worldwide in tropical, subtropical, and temperate bodies of water. The species can inhabit a variety of marine environments such as, oceanic waters, coastal areas, estuarine waters, oceanic inlets, and within bays and intercoastal waterways (NOAA, 2023). The giant manta ray is a filter feeder and consumes a large quantity of zooplankton. They are seasonal visitors to productive coastlines which appear to correspond with the movement of zooplankton, current circulation and tidal patterns, seasonal upwelling, seawater temperature, and possibly mating behaviour (NOAA, 2023).

The **green sawfish** is a species of ray that has a historic range extending from northern Australia down the east coast to Jervis Bay in New South Wales (DEE, 2017j). However, no records of this species exist south of Cairns since the 1960's (DEE, 2017j). The green sawfish prefers muddy bottom habitats, and has previously been recorded in inshore marine waters, estuaries, river mouths, embankments and along sandy and muddy beaches. Sawfish return seasonally to inshore coastal waters to breed and pup; pupping may occur during the summer wet season (DEE, 2017j). Given the contraction of the green sawfish's range, this species is not expected to be encountered within the Environmental Sectors.

The whale shark is an oceanic and coastal, tropical to warm-temperate pelagic large filter-feeder. Diet includes small crustaceans, small schooling fish and squid. There is known presence from NSW, NT, Queensland, Victoria and South Australia. The whale shark is often recorded far offshore, but is

also seen close inshore, occasionally entering lagoons of coral atolls. The whale shark seasonally aggregates in December and January in the coastal waters off Christmas Island, then in the Coral Sea between November and December. There is no information on when and where the whale shark breeds, with very few juveniles having been observed or captured (Department of the Environment, 2025k).

The Harrisson's dogfish is a species of gulper shark that are relatively small, deepwater sharks (DSEWPaC, 2013e). The species is mainly recorded in water depths between 200-650 m (Last and Stevens, 2009) but have been captured in depths down to 1,050 m (Daley et al., 2002). The distance that an individual can travel is not known but the species is identified to occur from the north of Evans Head in NSW, through waters off the coast of Victoria, to Cape Hauy in Tasmania (Williams et al., 2012). The Harrisson's dogfish diet consists mainly of fish and invertebrates including mesopelagic prey such as lanternfish and squid (Daley et al., 2002; Graham and Daley, 2011). The species also exhibits slow growth, late maturity age, and low fecundity, which makes them vulnerable to overfishing (Stobutzki et al., 2011). The waters of the Bass Strait are not known feeding, resting or reproductive grounds for the Harrisson's dogfish, although feeding may occur opportunistically where sufficient prey is present.

The **little gulper shark**, commonly known as the southern dogfish, are small, deepwater sharks (DSEWPaC, 2013f). The species is endemic to Australia in habitats on the upper-slope between 180 m to 900 m of the southern continental shelf (Williams et al., 2012). There are likely three distinct stocks of the little gulper shark: eastern stock (Australian east coast down to eastern Tasmania), central stock (west Tasmania to the Great Australian Bight), and a western stock (western Great Australian Bight to south Western Australia) (USDSWG, 2012; Williams et al., 2012). The species is absent in southern Tasmania through to the Bass Strait (DSEWPaC, 2013f). Similar to the Harrisson's dogfish, the little gulper shark is also vulnerable to overfishing due to its slow growth, late maturing age, and low fecundity (Stobutzki et al., 2011). The little gulper shark is not recorded to be present within the Bass Strait, and their reproductive migration is relatively unknown (Musick, 2011).

The **oceanic whitetip shark** is a pelagic species generally found offshore in the open ocean across the globe in tropical and subtropical waters. Although they have been recorded up to depths 1,000 m, they typically live in the upper part of the water column, from the surface to around 200 m (NOAA, 2024). The species are considered a surface-dwelling shark, showing a strong preference for the surface mixed layer in warm waters above 20°C (NOAA, 2024). Within Australian waters, the oceanic whitetip sharks range extends from Cape Leeuwin, WA north through parts of the Northern Territory, down the east coast of Queensland and NSW to Sydney (FRDC, 2019). The oceanic whitetip shark is considered an opportunistic forager, feeding primarily on bony fish and cephalopods, such as squid.

3.14.2 Australian Grayling

The Australian grayling is endemic to south-eastern Australia and occurs in coastal rivers and streams in NSW, Victoria and Tasmania. The Australian grayling is a dark brown to olive-green fish that is approximately 19 cm in length. This is a dimorphous, migratory species that inhabits estuarine waters and coastal seas as larvae/juveniles, and freshwater rivers and streams as adults (Backhouse et al., 2008). The Australian grayling will spend the majority of its life in freshwater and can penetrate far inland (this species has been recorded up to 100 km upstream from the sea) (Backhouse et al., 2008). Precise marine habitats are not well known. Spawning occurs in freshwater from late summer to winter and is thoughts to be initiated by an increase in river flow and a potential drop in water temperature (Once eggs hatch, the larvae drift downstream and out to sea where they remain for ~6 months (DoE, 2025).

3.14.3 Blue Warehou

The blue warehou is a school fish that usually aggregate close to the seabed and is confined to Australian and New Zealand waters (Kaschner et al., 2010). In Australia, the species predominantly occurs in the coastal shelf, upper continental slope, and seamount waters offshore from NSW, Tasmania, Victoria and South Australia (Bruce et al., 1998; Gomon, 2008). The species is recorded at depths between 50 - 500 m (AFMA, 2024d), although it is more abundant in waters shallower than 200 m (TSSC, 2015b). Juvenile fish can sometimes be found schooling close to the surface in estuaries, often in association with jellyfish (AFMA, 2024d). The blue warehouse is a migratory species but shows preference for relatively warmer waters of between 10 and 15°C (TSSC, 2015b).

Commercial fisheries are not permitted to target blue warehou, but the species is incidentally caught within the Gillnet, Hook and Trap Sector, Commonwealth Trawl Sector, and the Great Australian Bight Trawl Sector of the SESSF (AFMA, 2024d).

The waters of the Bass Strait are not known feeding, resting or reproductive grounds for the blue warehou, although feeding may occur opportunistically where sufficient prey is present. The blue warehou can be found within the Bass Strait but has primarily been incidentally caught on the east and west coast of Tasmania (AFMA, 2024d).

3.14.4 Handfish

Handfish are relatively small (60–151 mm) marine fishes with distributions restricted to the temperate waters of south-eastern Australia, predominantly concentrated in Tasmania (Last and Gledhill, 2009). They are demersal, generally cryptic in nature. Lacking a swim bladder, they prefer to use their ‘hands’ to ‘walk’ across the sea floor, rather than swim (although can do so over short distances when disturbed). Ziebell’s handfish is the largest known handfish species and is typically found on soft bottomed habitat with patches of rock that support sponge and algae communities (CoA, 2015a). The species is restricted to the coastal waters of southern and eastern Tasmania and is most often found at depths of 10-20 m. Habitat critical to the survival of the species is located in the Waterfall Bay area of the Tasman Peninsula (CoA, 2015a). The main identified threat to species of handfish is habitat degradation resulting from one or a combination of impacts including introduced species, pollution and siltation, increasing water temperatures and the proliferation of other native species as a result of human activities (DSEWPaC, 2012h.

Site specific habitat studies of BMG subsea infrastructure noted that fish assemblages present along wells and flowlines generally reflect those known to occur in the region. During analysis of survey footage, a tentative identification of handfish (Family Brachionichthyidae) was made. The species could not be confirmed due to image resolution (Ierodiaconou, 2021).

Stuart-Smith et. al 2020 reports 14 different species of handfish. Seven species of handfish are listed on the IUCN red list as either Critically Endangered or Endangered. Three of these IUCN listed species are also EPBC listed either Vulnerable or Endangered.

The images captured of the Handfish were done so by ROV mounted high-definition camera flying over the known flowline routes. These sections of flowlines were trenched and buried in 2012 (or have been naturally buried since installation). The specimens observed at BMG were all seen on areas of seabed covering the B6 EHU and B6 Oil Flowline (Figure 3-37). The seabed appears sandy/shell/silty/muddy. There is evidence of infauna (burrows/mounds) and epifauna. It is not obvious that the seabed was trenched, or that a flowline is buried beneath. Whilst detailed footage was taken (and analysed by Deakin) of exposed sections of flowlines at similar depths; no specimens were observed on or around the exposed flowlines. This may indicate that the handfish specimens

are not interacting with the flowline directly. The specimens observed were at least 200 m from the well centres.

Based on recorded distributions (Stuart-Smith et al 2020), the more likely explanation as to what species of handfish were observed around BMG is the Australian handfish. This species is not EPBC listed threatened and is listed by the IUCN as 'least concern'. Other handfish species with recorded localities and depth ranges resembling the BMG area include the warty handfish, Moulton's handfish, narrowbody handfish and humpback handfish. These species are listed by the IUCN as 'data deficient'. No EPBC listed handfish species are expected to be found in proximity to BMG assets, due to the depth (listed species are found in water depths up to 60 m) and the location (listed species have been observed in Tasmania only).

The combination of poor dispersal potential with highly localised distributions and generally low population numbers means that they are highly susceptible to local disturbance events and broader environmental change (Bruce et al., 1998; Last and Gledhill, 2009; Last et al., 1983). Threats to handfish are noted as 'Prolonged Trawl and Dredge effort within its range possibly causing both habitat destruction and direct mortality' (Stuart-Smith et al 2020).

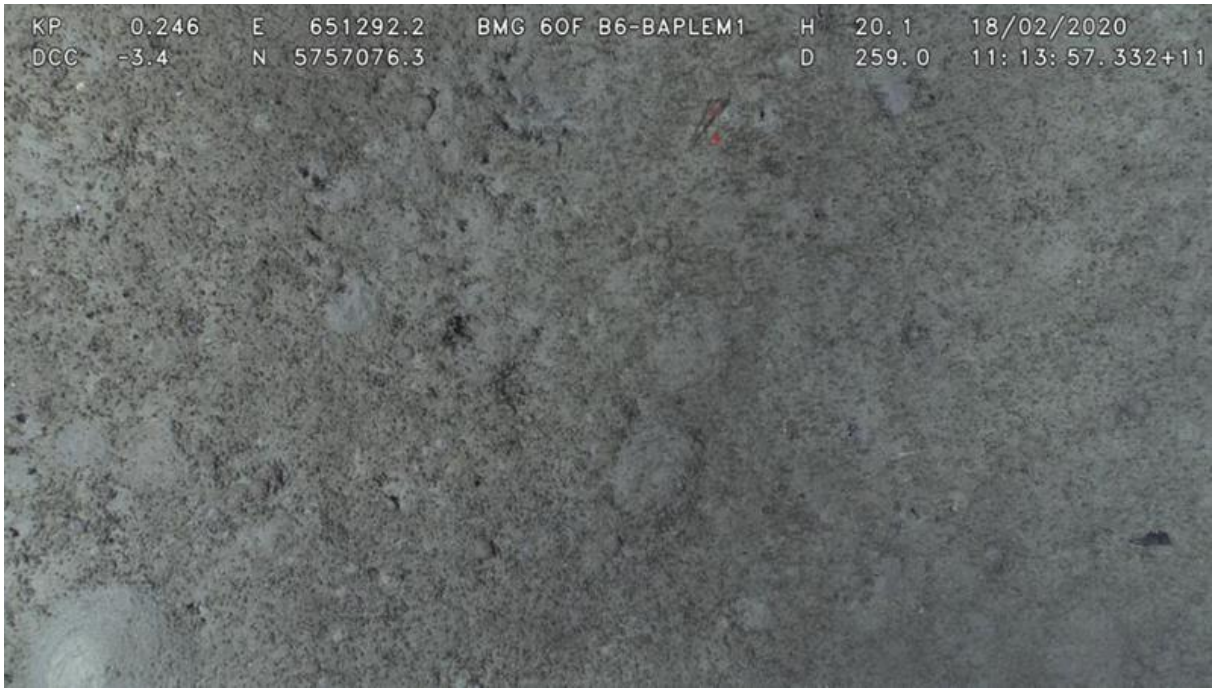


Figure 3-37: Suspected Handfish Sighting at BMG (Source: Ierodiaconou et al. 2021)

3.14.5 Pipefish, Seahorse and Seadragons

Syngnathidae is a group of bony fishes that includes **seahorses**, **pipefishes**, **pipehorses** and **sea dragons**; the closely related Solenostomidae family includes ghost pipefish. These species occupy a range of habitats. However, they generally display a preference for seagrass and macroalgal beds, coral reefs, mangroves or sponge gardens (i.e. a habitat offering a protective environment) (DSEWPaC, 2012b). Habitat that supports syngnathid populations is generally patchy, so populations of syngnathid species may be dispersed and fragmented (DSEWPaC, 2012b). Syngnathids are typically carnivorous, feeding in the water column on or near the sea floor; their diet including small crustaceans, invertebrates, and zooplankton.

3.14.6 Short-Finned Eel

The short-finned eel in adult and juvenile glass eels forms have the potential to occur within the Environmental Sectors during offshore spawning migration period. A study tracked downstream spawning migration of adult short-finned eels released from south-western Victoria (Hopkins and Fitzroy River estuaries) and observed the adult eels moved east or south along the Australian continental shelf exiting the Bass Strait to the east to migrate north to spawning grounds in tropical waters of the Coral Sea (Koster et al., 2021). From the spawning site in the Coral Sea, migration of short-finned eel larvae is influenced by ocean currents that carry the larvae from the Coral Sea south along the east Australian current and transport the developing larvae (glass eels) through the Bass Strait to the Victorian Coast (VFA, 2022a). Based on the observed migratory route of short-finned eels, short-finned eels in adult and glass eel forms may pass the Gippsland, Otway and Bass Strait Environmental Sectors.

Short-finned eels in the Otway Basin and Bass Strait have a seasonal presence. During late summer and autumn adult eels will enter the Otway Basin and Bass Strait to commence their migration to the Coral Sea. During mid-winter to late spring Short-finned eel in larvae and glass eel forms will enter Victorian estuaries to complete the upstream migration (VFA, 2022a).

3.14.7 Black Rockcod

Black Rockcod are territorial fish found off the coastline of southeastern Australia and northern New Zealand. They prefer near-shore rock and coral reef environments at depths down to 50 metres. Black rock-cod are carnivorous with diet including crustaceans and other fish. Individuals start life as female and transition to male at ~30 years of age. The Black Rockcod is common in NSW but seen infrequently due to its secretive nature, and is usually found hiding in caves and under ledges (Atlas of Living Australia, 2025b)

3.14.8 Orange Roughy

In Australia, Orange Roughy are found in cold deep waters across the southern half of the continent including Tasmania. They are predominantly found on the continental slope between 500 and 1400 m., also oceanic ridges and deep-water corals. Dense spawning and feeding aggregation are located on or near topographic features such as seamounts, canyons and plateaus. In Australian and New Zealand waters the orange roughy spawning starts between June. The Orange Roughy diet includes prawns, fish and squids with occasional mysids, amphipods and euphausiids (Department of the Environment, 2025l).

3.14.9 Eastern Gemfish

Eastern Gemfish are found in deeper continental shelf habitats and upper slope waters, generally found in water depths ~250 to 500 m. Gemfish are found throughout southern Australian temperate waters with adults migrating up the eastern Australian coast. The migration begins in June in east Bass Strait and finishes in August off the NSW central and north coast for spawning. The eastern gemfish is a carnivorous with diet including fish, royal red prawns and squid with feeding occurring near the ocean floor (Department of the Environment, 2025m)

3.14.10 Commercially Important Fish Species

There are a number of commercial fisheries that operate/ have operated across the Environmental Sectors (refer Section 5.1). Key target species (i.e., species with high monetary value) with reported fishing activity that are not EPBC listed have been identified, a number of which are described below.

The **school shark** is a globally widespread species that occurs in temperate waters offshore eastern United States, Hawaii, South America, South Africa, Europe, and New Zealand (Last and Stevens, 1994; McLoughlin, 2007). In Australian waters, the species is found in offshore waters from Moreton Bay, QLD to Perth, WA, including the offshore waters of Tasmania and Lord Howe Island (DEWHA, 2009b). The species moves more extensively in waters off southern Australia with individual migrations of up to 1,400 km recorded (DEWHA, 2009b). The school shark is primarily a demersal species and have been recorded at depths of 500 m during the day and then moving up during the night to about 100 m (McLoughlin, 2007). Female and juvenile sharks typically use inshore coastal areas around Victoria, Tasmania, and parts of South Australia for nursery areas (Pogonoski et al., 2002). The school shark is a key commercial species that is primarily caught in the Gillnet, Hook, and Trap sector of the Commonwealth Southern and Eastern Scalefish and Shark Fishery (SESSF) (DEWHA, 2009b). The species was historically the primary target within the fishery, but biomass was reduced below the limit reference point around 1990 (Davis et al., 2023). The school shark remains the second most economically important stock in the fishery despite being classified as overfished (Davis et al., 2023). The waters of the Bass Strait are not known feeding, resting or reproductive grounds for the school shark, although pups and juveniles are known to aggregate in shallow, inshore waters during the spring and summer (AFMA, 2024a).

The **gummy shark** is distributed throughout the temperate waters of Australia, from Port Stephens in NSW to Geraldton in WA, including Tasmania (Marton et al., 2014). The gummy shark is a demersal species that occurs on the continental shelf from the near shore region to depths of 80 - 350 m (AFMA, 2024e). The species remain either on or near the seabed with females traveling longer distances as their age increases (AFMA, 2024e). The gummy shark is a commercially important species and a key target in the Gillnet, Hook and Trap Sector of the Commonwealth SESSF (AFMA, 2024e). The species became the main target of the fishery from 1986 due to the adoption of monofilament gillnets and the concern surrounding mercury poisoning from large school sharks and declining school shark catches (Davis et al., 2023). The gummy shark has primarily been caught nearshore Tasmania, Victoria and South Australia (AFMA, 2024e). The waters of the Otway are not known feeding, resting, or reproductive grounds for the gummy shark.

Sawsharks are a common demersal species that inhabit the continental shelf and upper slope (AFMA, 2024f). There are three species of sawsharks that are frequently caught in Australian waters: the common, southern, and the delicate sawshark (Raoult et al., 2020). The southern and common sawshark have overlapping distributions and occur down to 630 m (Last and Stevens, 2009). However, the depth where these two sawfish species are most common is not known (Raoult et al., 2020). The sawshark is incidentally caught within the Gillnet Hook and Trap Sector and the Commonwealth Trawl Sector of the SESSF, and state managed fisheries (AFMA, 2024f). In Commonwealth waters, the highest total catches of sawshark were observed on the northeastern side of Bass Strait (Raoult et al., 2020) approximately 90% of catch within the SESSF (Davis et al., 2023).

Species of **wrasse** have different lifestyle characteristics such as diets (ranging from highly specialised diets to highly opportunistic carnivores), use different habitats, and occurrence across different depths (Berkstrom et al.,2012). Wrasses are key target species for the Victorian Wrasse

(Ocean) Fishery. The bluethroat wrasse and purple wrasse are the most caught species within the fishery, comprising of approximately 90% of the commercial Victorian wrasse harvest (VFA, 2025b). Small catches of rosy, senator, and southern Maori wrasse are also caught within the fishery (VFA, 2025b). The wrasse species targeted in Victoria can occur down to depths of 160 m. However, species are mostly caught in depth shallower than 30 m to reduce loss due to barotrauma (where the swim bladder expands and damages the fish brought to the surface) (VFA, 2025b).

Flathead species are bottom-dwelling fish that are distributed in tropical and temperate waters around Australia (VFA, 2021). There are many species of flathead but the southern bluespotted, sand, rock, tiger, and dusky flathead are the most commonly target species by recreational fisheries (VFA, 2021). The tiger flathead is also caught within the Commonwealth Trawl and Scalefish Hook Sector of the SESSF (Emery et al., 2023). The tiger flathead is endemic to Australia and found on sandy or muddy substrates in the continental shelf and upper-slope waters from Coffs Harbour in NSW through Bass Strait and around Tasmania to south-east South Australia (Emery et al., 2023). Majority of the commercial catch for the tiger flathead comes from depths between 50 m and 200 m (Emery et al., 2023).

The **pink ling** is a demersal species that can be found along the continental shelf and slope, occurring at depths between 20 – 1,000 m (AFMA, 2024g). Juveniles are generally found in shallower locations than adults (Bessell-Browne et al., 2021). In Australia, the species is found from central NSW to the south-west coast of WA (Bessell-Browne et al., 2021). The pink ling is a commercially important species and a key target in the Gillnet, Hook and Trap Sector and the South East Trawl Sector of the Commonwealth SESSF (AFMA, 2024g). The species has been commercially caught in southern Australia since the 1970s by both Commonwealth and state fisheries (Bessell-Browne et al., 2021).

The **blue grenadier** is a deepwater species and is found in the continental slope, occurring at depths between 200 - 700 m (AFMA, 2024h). The species is found from NSW around southern Australia, including Tasmania, to WA (Castillo-Jordan and Tuck, 2018). The blue grenadier is a commercially important species and a key target in the South East Trawl Sector of the SESSF (AFMA, 2024h). The species is primarily caught off western and eastern Tasmania and mostly during winter (AFMA, 2024h), which coincides with peak spawning (Castillo-Jordan and Tuck, 2018).

Table 3-20: EPBC Act Listed Fish Species or Species Habitat that May Occur within the Environmental Sectors

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Fish															
Amphiprion mccullochi	Whitesnout Anemonefish	CE				[1]						KO	KO	KO	
Brachionichthys hirsutus	Spotted Handfish	CE				[2],[3], [4]				MO	KO				
Brachiopsilus ziebelli	Ziebell's Handfish	V				[4]				LO	LO				
Epinephelus daemelii	Black Rockcod	V				[5], [6]			LO			LO	LO	LO	KO
Gadopsis sp. SWV	Western Victorian Blackfish	E				[7]	LO								
Galaxias fontanus	Swan Galaxias	E				[8], [9]					MO				
Galaxias terenasus	Roundsnout Galaxias	E				[10]			MO						
Galaxiella pusilla	Eastern Dwarf Galaxias	E				[11] [12]	KO	KO	LO	KO	MO				
Hippocampus bargibanti	Pygmy Seahorse												MO		
Hoplostethus atlanticus	Orange Roughy	CD					LO	LO	LO	LO	LO	LO	LO	LO	LO

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Prototroctes maraena	Australian Grayling	V				[13], [14]	KO	KO	KO	KO	KO	KO			
Maccullochella mariensis	Mary River Cod	E				[15], [16]							KO		
Maccullochella peelii	Murray Cod	V				[17], [18], [19]		KO				Tr			
Macquaria australasica	Macquarie Perch	E				[20], [21]						Tr			
Mordacia praecox	Precocious Lamprey	E				[22]			LO			LO	LO		
Nannoperca obscura	Yarra Pygmy Perch	E				[23] [24]	KO	KO							
Nannoperca oxleyana	Oxleyan Pygmy Perch	E				[25], [26]							KO		
Nannoperca variegata	Variegated Pygmy Perch	V				[27], [28]	KO								
Pseudomugil mellis	Honey Blue Eye	E				[29]							KO		
Rexea solandri	Eastern Gemfish	CD				[30]	MO	LO	LO	LO	LO	LO	LO		
Seriolella brama	Blue Warehou	CD				[31]	KO	KO	KO	KO	KO	KO	KO		

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Thymichthys politus	Red Handfish	CE				[32],[33], [4]		MO		MO	KO				
Sharks and Rays															
Anoxupristis cuspidata	Narrow Sawfish		✓										LO		
Carcharhinus longimanus	Oceanic Whitetip Shark		✓						MO			LO	LO	MO	MO
Carcharias taurus	Grey Nurse Shark		✓				MO	MO	C/A *f.m	MO		C/A *f.m	C/A *f.m		
Carcharias taurus	Grey Nurse Shark (east coast population)	CE			*	[34], [35]			C/A *f.m			C/A *f.m	C/A *f.m		
Carcharodon carcharias	White Shark	V	✓		*	[36]	FKO *d	BKO *b,d	BKO *b,d	FKO *d	MKO *d	BKO *a,d	C/A *a,d	LO	LO
Centrophorus harrissoni	Harrisson's Dogfish	CD				[37]		LO	LO	LO	LO	LO	LO		LO
Centrophorus uyato	Little Gulper Shark	CD				[38]	LO	LO	LO	LO	LO	LO			
Galeorhinus galeus	School Shark	CD				[39]	LO	LO	LO	LO	LO	MO	MO	MO	MO
Isurus oxyrinchus	Shortfin Mako		✓				LO	LO	LO	LO	LO	LO	LO	LO	LO

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Isurus paucus	Longfin Mako		✓									LO	LO	LO	LO
Lamna nasus	Porbeagle, Mackerel Shark		✓				LO	LO	LO	LO	LO	LO	MO	MO	MO
Manta alfredi	Reef Manta Ray		✓									KO	KO	LO	
Manta birostris	Giant Manta Ray		✓						KO			LO	LO	LO	
Pristis zijsron	Green Sawfish	V				[40], [41], [42]							BMO		
Rhincodon typus	Whale Shark	V	✓			[43], [44]		MO	MO			MO	MO		
Sphyrna lewini	Scalloped Hammerhead	CD				[45]						KO	KO	LO	LO
Zearaja maugeana	Maugean Skate	E				[46]				KO					
Pipefish, Seahorse and Seadragons															
Acentronura australe	Southern Pygmy Pipehorse			✓			MO								
Acentronura tentaculate	Shortpouch Pygmy Pipehorse			✓					MO			MO	MO		
Campichthys tryoni	Tryon's Pipefish			✓			MO					MO	MO		

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Choeroichthys brachysoma	Pacific Short-bodied Pipefish			✓									MO		
Choeroichthys suillus	Pig-snouted Pipefish												MO		
Corythoichthys amplexus	Fijian Banded Pipefish			✓								MO	MO		
Corythoichthys flavofasiatus	Reticulate Pipefish			✓									MO		
Corythoichthys haematopterus	Reef-top Pipefish			✓									MO		
Corythoichthys intestinalis	Australian Messmate Pipefish			✓									MO		
Corythoichthys ocellatus	Orange-spotted Pipefish			✓								MO	MO		
Corythoichthys paxtoni	Paxton's Pipefish			✓									MO		
Corythoichthys schultzi	Schultz's Pipefish			✓									MO		
Cosmocampus darrosanus	D'Arros Pipefish			✓									MO		
Cosmocampus howensis	Lord Howe Pipefish			✓					MO			MO	MO	MO	

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Doryrhamphus excisus	Bluestripe Pipefish			✓									MO		
Doryrhamphus negrosensis	Flagtail Pipefish			✓									MO		
Festuclex cinctus	Girdled Pipefish			✓								MO	MO		
Filicampus tigris	Tiger Pipefish			✓								MO	MO		
Halicampus boothae	Booth's Pipefish			✓								MO	MO	MO	MO
Halicampus dunckeri	Red-hair Pipefish			✓									MO		
Halicampus grayi	Mud Pipefish			✓								MO	MO		
Halicampus macrorhynchus	Whiskered Pipefish			✓									MO		
Halicampus nitidus	Glittering Pipefish			✓									MO		
Halicampus spinirostris	Spiny-snout Pipefish			✓									MO		
Heraldia nocturna	Upside-down Pipefish			✓			MO	MO	MO	MO	MO	MO			
Hippichthys cyanospilos	Blue-speckled Pipefish			✓								MO	MO		

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Hippichthys heptagonus	Madura Pipefish			✓								MO	MO		
Hippichthys peniculls	Beady Pipefish			✓								MO	MO		
Hippocampus abdominalis	Big-belly Seahorse			✓			MO	MO	MO	MO	MO	MO			
Hippocampus bargibanti	Pygmy Seahorse			✓									MO		
Hippocampus breviceps	Short-head Seahorse			✓			MO	MO	MO	MO	MO	MO			
Hippocampus kelloggi	Kellogg's Seahorse			✓								MO	MO	MO	
Hippocampus kuda	Spotted Seahorse			✓								MO	MO		
Hippocampus minotaur	Bullneck Seahorse			✓			MO	MO	MO						
Hippocampus planifrons	Flat-face Seahorse			✓								MO	MO		
Hippocampus trimaculatus	Three-spot Seahorse			✓								MO	MO		
Hippocampus whitei	White's Seahorse	E		✓								KO	MO		
Hippocampus zebra	Zebra Seahorse			✓									MO		

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Histiogamphelus briggsii	Crested Pipefish			✓			MO	MO	MO	MO	MO	MO			
Histiogamphelus cristatus	Rhino Pipefish			✓			MO	MO	MO	MO					
Hypselognathus rostratus	Knifesnout Pipefish			✓			MO	MO	MO	MO	MO				
Kaupus costatus	Deepbody Pipefish			✓			MO	MO	MO	MO	MO				
Kimblaeus bassensis	Trawl Pipefish			✓			MO	MO	MO		MO	MO			
Leptoichthys fistularius	Brushtail Pipefish			✓			MO	MO	MO	MO					
Lissocampus caudalis	Australian Smooth Pipefish			✓			MO	MO	MO	MO					
Lissocampus runa	Javeline Pipefish			✓			MO	MO	MO	MO	MO	MO	MO		
Maroubra perserrata	Sawtooth Pipefish			✓			MO	MO	MO	MO	MO	MO	MO		
Micrognathus andersonii	Anderson's Pipefish			✓								MO	MO		
Micrognathus brevirostris	Thorntail Pipefish			✓								MO	MO		

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Microphis manadensis	Manado Pipefish			✓								MO	MO		
Mitotichthys mollisoni	Mollison's Pipefish			✓			MO	MO	MO	MO	MO				
Mitotichthys semistriatus	Halfbanded Pipefish			✓			MO	MO	MO	MO	MO				
Mitotichthys tuckeri	Tucker's Pipefish			✓			MO	MO	MO	MO	MO				
Nannocampus pictus	Painted Pipefish			✓									MO		
Notiocampus ruber	Red Pipefish			✓			MO	MO	MO	MO	MO	MO			
Phycodurus eqques	Leafy Seadragon			✓			MO	MO	MO	MO					
Phyllopteryx taeniolatus	Common Seadragon			✓			MO	MO	MO	MO	MO	MO			
Pugnaso curtirostris	Pugnose Pipefish			✓			MO	MO	MO	MO	MO				
Solegnathus dunckeri	Duncker's Pipehorse			✓								MO	MO	MO	
Solegnathus harwickii	Pallid Pipehorse			✓								MO	MO		
Solegnathus robustus	Robust Pipehorse			✓			MO	MO	MO	MO	MO				

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Solegnathus spinosissimus	Spiny Pipehorse			✓			MO	MO	MO	MO	MO	MO	MO		
Solenostomus cyanopterus	Robust Ghostpipefish			✓					MO			MO	MO		
Solenostromus paradoxus	Ornate Ghostpipefish			✓								MO	MO		
Stigmatopora argus	Spotted Pipefish			✓			MO	MO	MO	MO	MO	MO			
Stigmatopora nigra	Widebody Pipefish			✓			MO	MO	MO	MO	MO	MO	MO		
Stipecampus cristatus	Ringback Pipefish			✓			MO	MO	MO	MO					
Syngnathoides biaculeatus	Double-end Pipehorse			✓				MO	MO			MO	MO		
Trachyrhamphus bicoarctatus	Bentstick Pipefish			✓								MO	MO		
Trachyrhamphus longirostris	Straightstick Pipefish			✓									MO		
Urocampus carinirostris	Hairy Pipefish			✓			MO	MO	MO	MO	MO	MO	MO		
Vanacampus margaritifer	Mother-of-pearl Pipefish			✓			MO	MO	MO	MO		MO	MO		

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Vanacampus phillipi	Port Phillip Pipefish			✓			MO	MO	MO	MO	MO	MO			
Vanacampus poecilolaemus	Longsnout Pipefish			✓			MO	MO	MO	MO	MO				
Vanacampus vercoi	Verco's Pipefish			✓			MO								

Threatened Species:

V *Vulnerable*

E *Endangered*

CE *Critically Endangered*

Migratory Species:

M *Marine*

W *Wetland*

T *Terrestrial*

Biologically Important Area

* *BIA Present*

a *Aggregation*

b *Breeding*

Type of Presence:

MO Species or species habitat may occur within area

LO Species or species habitat likely to occur within area

KO Species or species habitat known to occur within area

Tr Translocated population known to occur within area

C/A Congregation or aggregation known to occur within area

FKO Foraging, feeding or related behaviour known to occur within area

BMO Breeding may occur within area

BKO Breeding known to occur within area

MKO Migration known to occur within area

Plan Reference:

[1] Conservation Advice *Amphiprion mccullochi* McCulloch's anemonefish, whitesnout anemonefish (TSSC, 2024a)

[2] Approved Conservation Advice on *Brachionichthus hirsutus* (Spotted Handfish) (TSSC 2012b)

[3] Commonwealth Listing Advice on *Brachionichthys hirsutus* (Spotted Handfish) (TSSC, 2012c)

[4] Recovery Plan for Three Handfish Species: Spotted Handfish (*Brachionichthys hirsutus*), Red Handfish (*Thymichthys politus*), and Ziebell's Handfish (*Branchiopsilus ziebelli*) (DoE, 2015b)

[5] Approved Conservation Advice for *Epinephelus daemelii* (Black Rock-cod) (DSEWPaC, 2012f)

[6] Commonwealth Listing Advice on *Epinephelus daemelii* (Black Rock-cod) (TSSC, 2012d)

[7] Conservation Advice for *Gadopsis sp. SWV* (western Victorian blackfish) (DCCEEW, 2025c)

[8] Conservation Advice *Galaxias fontanus* Swan galaxias (TSSC, 2016k)

[9] Recovery Plan: Tasmanian *Galaxiidae* 2006-2010 (TSSC, 2006a)

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
f *Foraging*							[10] Conservation Advice for *Galaxias terenasus* (roundsnout galaxias) (DCCEEW, 2023s) [11] Conservation Advice for *Galaxiella pusilla* (dwarf galaxias) (DCCEEW, 2023m) [12] National recovery plan for the Dwarf Galaxias (*Galaxiella pusilla*) (Saddlier et al., 2010a) [13] Conservation Advice *Prototroctes maraena* Australian Grayling (TSSC, 2021) [14] National Recovery Plan for Australian Grayling (DEWHA, 2008) [15] Conservation Advice *Maccullochella mariensis* Mary River cod (TSSC, 2016l) [16] The Mary River Cod Research and Recovery Plan (Simpson & Jackson, 1996). [17] Conservation Advice for *Maccullochella peelii* (Murray cod) (DCCEEW, 2024k) [18] Commonwealth Listing Advice on *Maccullochella peelii peelii* (Murray Cod, Cod, Goodoo) (TSSC, 2003). [19] National Recovery Plan for the Murray Cod *Maccullochella peelii peelii* (National Murray Cod Recovery team (2010) [20] Approved Conservation Advice for *Macquaria australasica* (Macquarie perch) (DCCEEW, 2013) [21] National Recovery Plan for the Macquarie Perch (*Macquaria australasica*) (DEE, 2018c) [22] Conservation Advice for Mordacia praecox (*precocious lamprey*) (DCCEEW, 2023)								

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
							[23] National recovery plan for the Yarra Pygmy Perch (Nannoperca obscura) (Saddlier and Hammer, 2010a) [24] Conservation Advice for Nannoperca obscura (Yarra pygmy perch) (DCCEEW, 2023b) [25] Conservation Advice for *Nannoperca oxleyana* (Oxleyan pygmy perch) (DCCEEW, 2022f) [26] Oxleyan pygmy perch (*Nannoperca oxleyana*) Recovery Plan (NSW DPI, 2008) [27] National recovery plan for the Variegated Pygmy Perch (Nannoperca variegate) (Saddlier and Hammer, 2010b) [28] Conservation Advice for *Nannoperca variegata* (variegated pygmy perch) (DCCEW, 2024l) [29] Conservation Advice for *Pseudomugil mellis* (honey blue eye) (DCCEEW, 2023t) [30] Commonwealth Listing Advice on *Rexea solandri* (TSSC, 2009) [31] Listing Advice *Seriolella brama* blue warehou (TSSC, 2015r) [32] Approved Conservation Advice for Thymichthys politus (Red Handfish) (DSEWPaC, 2012h) [33] Commonwealth Listing Advice on *Thymichthys politus* (Red Handfish) (TSSC, 2012e) [34] Commonwealth Listing Advice on *Carcharias taurus*, Grey Nurse Shark (East Coast population) (TSSC, 2021a) [35] Recovery Plan for the Grey Nurse Shark (*Carcharias Taurus*) (DoE, 2014)								

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
							[36] Recovery Plan for the White Shark (*Carcharodon carcharias*) (DSEWPaC, 2013a) [37] Commonwealth Listing Advice on *Centrophorus harrissoni* (Harrisson's dogfish) (TSSC, 2013c) [38] Commonwealth Listing Advice on *Centrophorus zeehaani* (southern dogfish). (TSSC, 2013d) [39] Commonwealth Listing Advice on *Galeorhinu galeus* (TSSC, 2009b)[40] Approved Conservation Advice for *Pristis zijsron* (Green Sawfish) (TSSC, 2008a) [41] Listing Advice for *Pristis zijsron* (Green Sawfish) (TSSC, 2008)[42] Sawfish and River Sharks Multispecies Recovery Plan (DoE, 2015c) [43] Approved Conservation Advice for *Rhincodon typus* (Whale Shark) (TSSC, 2015h) [44] Commonwealth Listing Advice on *Rhincodon typus* (Whale shark) (TSSC, 2001c) [45] Listing Advice for *Sphyrna lewini* (scalloped hammerhead) (TSSC, 2024) [46] Conservation Advice for *Zearaja maugeana* (Maugean Skate) (TSSC, 2008b)								

Table 3-21: Fish Threatened Species Management Advice Relevant to Petroleum Activities within Applicable Amplitude Operating Areas

Species	Conservation Advice/Recovery Plan	Key Threats relevant to Petroleum Activities	Management Actions relevant to activities within applicable Amplitude operating areas
• Spotted Handfish • Ziebell's Handfish • Red Handfish	Recovery Plan for Three Handfish Species: Spotted Handfish (*Brachionichthys hirsutus*), Red Handfish (*Thymichthys politus*), and Ziebell's Handfish (*Branchiopsilus ziebelli*) (DoE, 2015b)	None identified	None identified
Spotted Handfish	Approved Conservation Advice on *Brachionichthus hirsutus* (Spotted Handfish) (TSSC 2012b)	None identified	None identified
Red Handfish	Approved Conservation Advice for *Thymichthys politus* (Red Handfish) (DSEWPaC, 2012h)	None identified	None identified
Black Rockcod	Approved Conservation Advice for *Epinephelus daemelii* (Black Rock-cod) (TSSC, 2012b)	None identified	None identified
Australian Grayling	National Recovery Plan for Australian Grayling (DEWHA, 2008)	None identified	None identified
Dwarf Galaxias	Conservation Advice for Galaxiella pusilla (dwarf galaxias) (DCCEEW, 2024m)	None identified	None identified

Species	Conservation Advice/Recovery Plan	Key Threats relevant to Petroleum Activities	Management Actions relevant to activities within applicable Amplitude operating areas
	National Recovery Plan for the Dwarf Galaxias (*Galaxiella pusilla*) (Saddlier, et al., 2010)		
Yarra Pygmy Perch	Conservation Advice for *Nannoperca obscura* (Yarra pygmy perch) (DCCEEW, 2023b) National Recovery Plan for the Yarra Pygmy Perch (*Nannoperca obscura*) (Saddlier and Hammer, 2010a)	None identified	None identified
Variegated Pygmy Perch	National recovery plan for the Variegated Pygmy Perch (Nannoperca variegata) (Saddlier and Hammer, 2010b)	None identified	None identified
Sharks and Rays			
Grey Nurse Shark (east coast population)	Recovery Plan for the Grey Nurse Shark (*Carcharias Taurus*) (DoE, 2014)	None identified	None identified
Great White Shark	Recovery Plan for the White Shark (*Carcharodon carcharias*) (DSEWPaC, 2013a)	None identified	None identified

Species	Conservation Advice/Recovery Plan	Key Threats relevant to Petroleum Activities	Management Actions relevant to activities within applicable Amplitude operating areas
Green Sawfish	Approved Conservation Advice for *Pristis zijsron* (Green Sawfish) (TSSC, 2008a) Sawfish and River Sharks Multispecies Recovery Plan (DoE, 2015c)	None identified	None identified
Whale Shark	Approved Conservation Advice for *Rhincodon typus* (Whale Shark) (TSSC, 2015h)	• Vessel strike • Habitat disruption from mineral exploration, production and transportation • Marine debris	• Vessel disturbance: Evaluate risk of vessel strikes and, if required, appropriate mitigation measures are implemented
Maugean Skate	Approved Conservation Advice for *Raja sp. L* (Maugean Skate) (TSSC, 2008b)	None identified	None identified

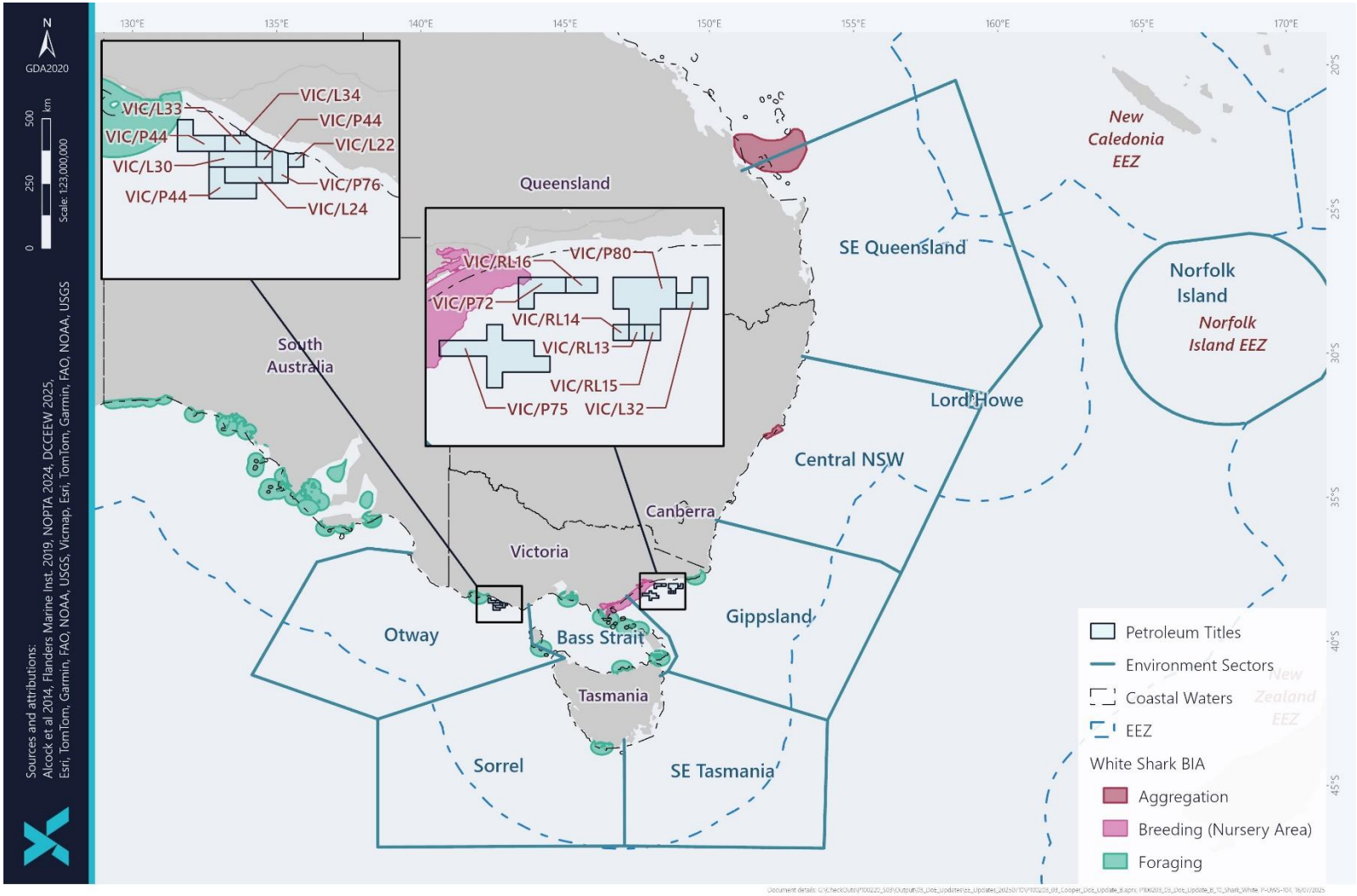


Figure 3-38: BIAs for the White Shark

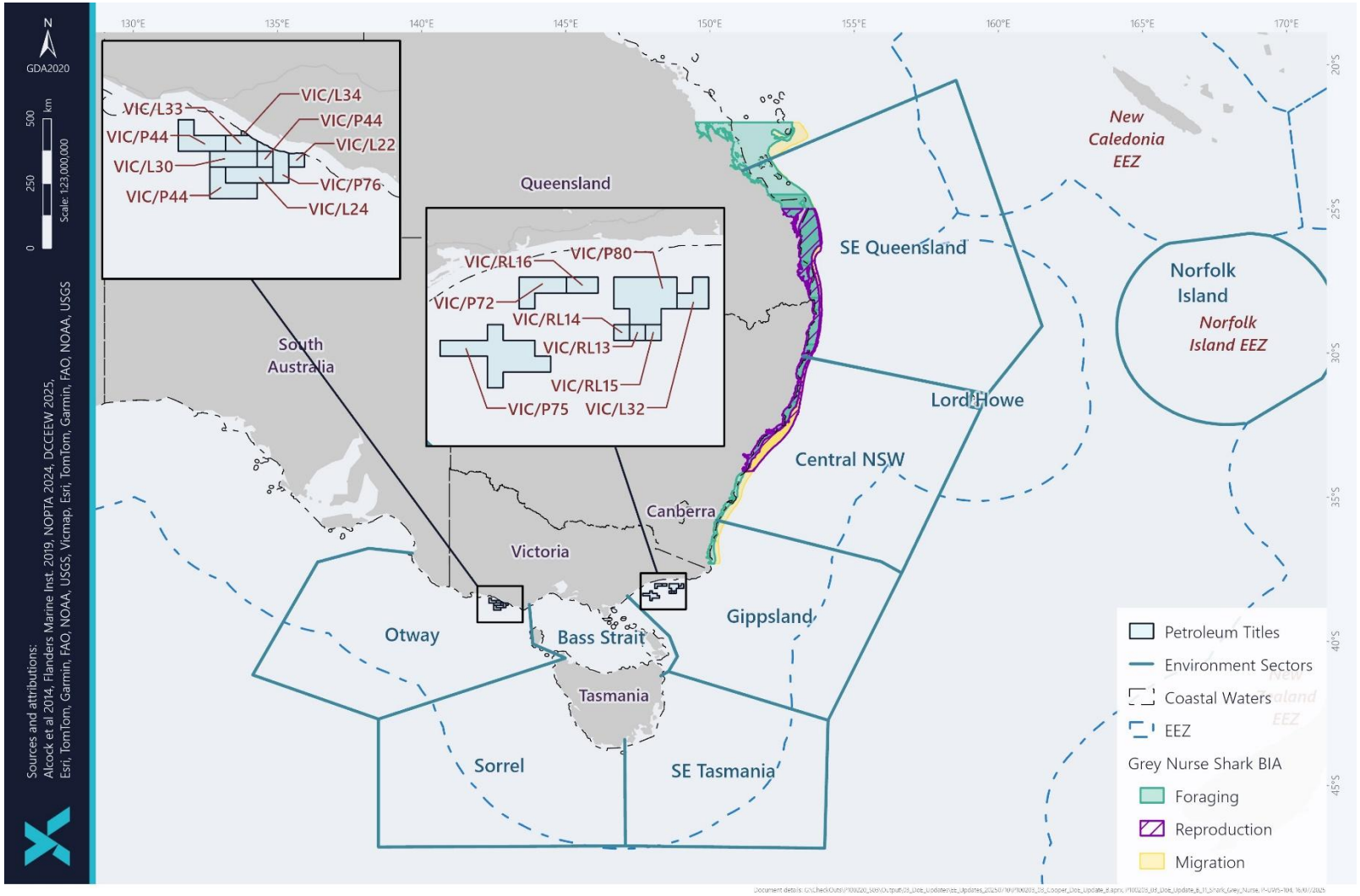


Figure 3-39: BIAs for the Grey Nurse Shark

Table 3-22: Known Key Aggregation Sites[1] critical for the Survival of the Grey Nurse Shark in Australian Waters

Queensland Waters	New South Wales Waters	Commonwealth Waters
• Wolf Rock off Rainbow Beach • Cherubs Cave off Moreton Island • Henderson's Rock off Moreton Island • Flat Rock off North Stradbroke Island.	• Julian Rocks near Byron Bay • North Solitary Island (Anemone Bay) • South Solitary Island (Manta Arch) • Green Island near South West Rocks • Fish Rock near South West Rocks • Mermaid Reef near Laurieton • The Pinnacle near Forster • Big Seal, Seal Rocks • Little Seal, Seal Rocks • Little Broughton Island near Port Stephens • Magic Point at Maroubra, Sydney • Tollgate Islands near Batemans Bay • Montague Island near Narooma.	• Pimpernel Rock off Brooms Head (northern section of Solitary Islands Marine Park) • Cod Grounds off Laurieton.

[1]'Key Aggregation Sites' defined as being locations where five or more Grey Nurse Sharks were consistently found throughout the year (DoE, 2014).

3.15 Marine Reptiles

There are six marine turtles, 13 sea snakes, and one crocodile species (or species habitat) that may occur within the Environmental Sectors; this includes species classified as threatened and migratory (Table 3-23). A list of the relevant conservation advice and/or recovery plans is also provided in Table 3-24, with relevant management actions in Figure 3-41. The type of presence varies between species and location, and includes important behaviours (e.g. foraging, breeding) for some species (Table 3-23).

3.15.1 Marine Turtles

Adult marine turtles spend the majority of their lives in the ocean, typically only coming onshore to nest (Figure 3-40). Females can lay (on average) between two and six clutches per season (DEE, 2017k); with the period between clutches known as the internesting period. Female turtles typically remain close to the same nesting site during an internesting period. Egg incubation varies between species, but is typically approximately two months (DEE, 2017k). Hatchlings disperse into oceanic currents, and the juveniles will stay in pelagic waters until large enough to settle into coastal feeding habitats. Leatherback turtles are an exception to these general patterns, often exhibiting larger internesting zones, and travelling vast distances to forage rather than settling in a coastal habitat (DEE, 2017k). Flatback turtles also lack an oceanic phase and remain in the surface waters of the continental shelf.

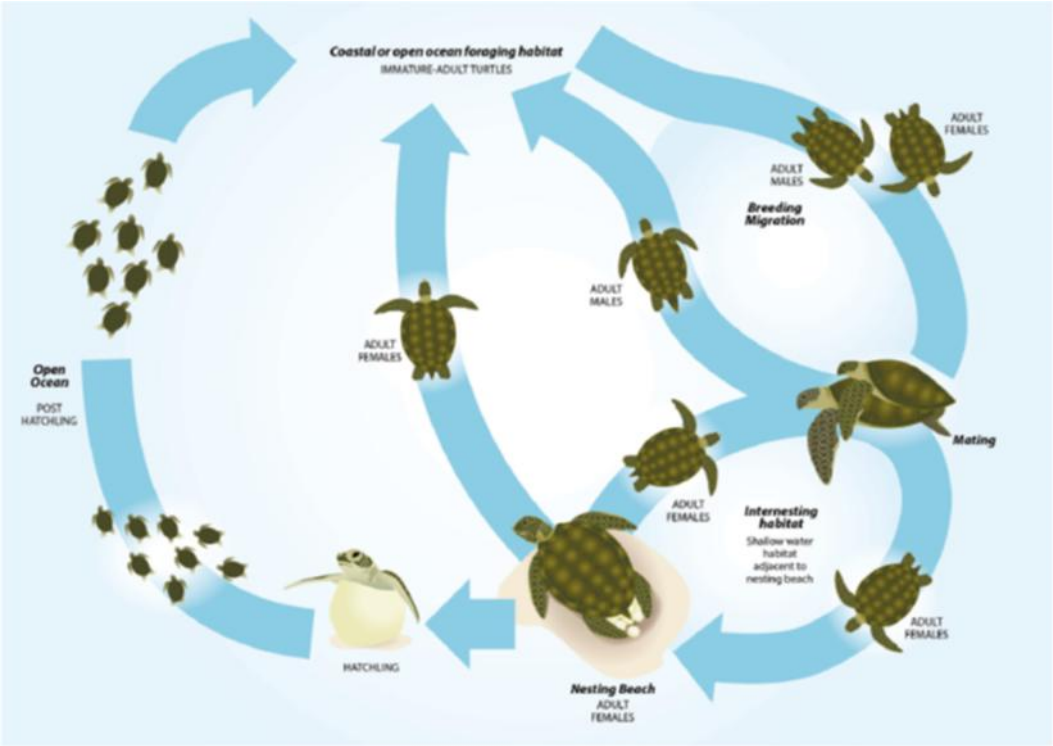


Figure 3-40: Generalised Life Cycle of a Marine Turtle (Source: DEE, 2017k)

The **loggerhead turtle** has a global distribution throughout tropical, sub-tropical and temperate waters; and in Australia typically occurs in the waters of coral and rocky reefs, seagrass beds, or muddy bays throughout eastern, northern and western Australia (DEE, 2017l). While the species has a broad foraging range throughout Australian waters, nesting is known to occur (from two different

genetic stocks) on sandy beaches on the central western and eastern coasts (Figure 3-41) (DEE, 2017l). Loggerhead turtles will migrate over distances in excess of 1,000 km between breeding and foraging grounds each season showing strong fidelity to these important areas (Limpus, 2008). Nesting on the east coast typically occurs between October and March each year (Table 3-25). A BIA, for nesting and internesting, has also been identified for this species in this area (Figure 3-42). More recent information released in the Recovery Plan (DEE, 2017k) presents draft critical habitat areas for the loggerhead turtle; some of which overlap with previously defined BIAs (Figure 3-42). The eastern Australian population is smaller than the western Australian population; and has also undergone a decline from approximately 3,500 nesting females in 1977, to approximately 500 nesting females in 2000 (DEE, 2017l). Important local foraging areas for the species, include the Great Barrier Reef area and Moreton Bay (DEE, 2017l). Loggerhead turtles are carnivorous, feeding primarily on benthic invertebrates (DEE, 2017l).

Green turtles are found in tropical and subtropical waters throughout the world; usually occurring within the 20°C isotherms, although individuals can stray into temperate waters (DEE, 2017m). Within Australia, green turtles typically nest, forage and migrate across tropical northern Australia (Figure 3-41) (DEE, 2017m). The first 5-10 years of the green turtles life is spent drifting on ocean currents, consuming plankton, crustaceans and algae (DoE, 2025; CoA, 2017). Once they reach an adequate size the species moves to shallow foraging grounds. There is one nesting stock for green turtles within the Environmental Sectors, with nesting typically occurring between October and April; and peaking in January (Figure 3-41, Table 3-25). A BIA, for nesting, internesting, and foraging, has also been identified for this species in this area (Figure 3-42). More recent information released in the Recovery Plan (DEE, 2017k) presents draft critical habitat areas for the Green Turtle; some of which overlap with previously defined nesting BIAs (Figure 3-42). The total Australian population of green turtles is approximately 70,000 individuals, with approximately 8,000 of these found in the Southern Great Barrier Reef area (DEE, 2017m). Adult green turtles consume mainly seagrass and algae, although they will occasionally eat mangroves, fish-egg cases, jellyfish, and sponges; juvenile green turtles are typically more carnivorous and will also consume plankton during their pelagic stage (DEE, 2017m).

The **leatherback turtle** has the widest distribution of any marine turtle, occurring in tropical to sub-polar oceans (TSSC, 2008c). In Australia, the leatherback turtle has been recorded foraging in all Australian states, but no large nesting populations have been recorded (Figure 3-41) (TSSC, 2008c). Small numbers of nesting females have previously been recorded in central Queensland, northern NSW, and the Northern Territory; however, no nesting has been recorded in eastern Australian since 1996 (TSSC, 2008c). There is a BIA established, for nesting and internesting, for a small area in central Queensland (Figure 3-42). The leatherback turtle is a highly pelagic species, venturing close to shore mainly during the nesting season (DEE, 2017n). Adults feed mainly on pelagic soft-bodied creatures such as jellyfish, tunicates, salps, squid (DEE, 2017n).

The **flatback turtle** is found in tropical waters of northern Australia and is one of only two species of sea turtle without a global distribution (DEE, 2017o). All known nesting locations for this species are within Australia (Figure 3-41) (DEE, 2017o). A BIA for nesting has been identified for this species, with the southern extent of this occurring within the 'SE Queensland' Environmental Sector (Figure 3-42); the majority of flatback turtle nesting in Queensland occurs further north. More recent information released in the Recovery Plan (DEE, 2017k) presents draft critical habitat areas for the flatback turtle; some of which overlap with previously defined BIAs (Figure 3-42). In Queensland nesting occurs between October and March, with a peak in December (Table 3-25) (DEE, 2017o). Nesting trends at Mon Repos and Curtis Island show no signs of decline (DEE, 2017o). Flatback turtles are primarily carnivorous, feeding on soft-bodied invertebrates; juveniles eat gastropod

molluscs, squid, siphonophores (DEE, 2017o). Limited data also indicate that cuttlefish, hydroids, soft corals, crinoids, molluscs and jellyfish may also form part of their diet (DEE, 2017o).

The **hawksbill turtle** is found in tropical, subtropical and temperate waters all around the world (DEE, 2017p). Nesting within Australia for the hawksbill turtle occurs outside the Environmental Sectors; however, their known range does extent into the temperate waters of southern Queensland and New South Wales (Figure 3-41). Hawksbill turtles are omnivorous, feeding on sponges, hydroids, cephalopods (octopus and squid), gastropods (marine snails), cnidarians (jellyfish), seagrass and algae (DEE, 2017k, 2017p). The first 5-10 years of the hawksbill turtles life is spent drifting on ocean currents, consuming plankton (DoE, 2025). Once they reach an adequate size the species moves to reef foraging grounds feeding on sponges, soft bodied invertebrates, seagrass and algae (DEE, 2017p; CoA, 2017). Hawksbill turtles that forage on the Great Barrier Reef migrate to neighbouring countries including Papua New Guinea, Vanuatu, and the Solomon Islands; it is not known from which stock hawksbill turtles foraging in New South Wales originate (DEE, 2017k).

The **Olive Ridley** turtle is found in waters across northern Australia and to the southern Queensland border (Figure 3-41). No nesting for Olive Ridley turtles occurs within the Environmental Sectors (Figure 3-41) (DEE, 2017q). Olive Ridley Turtles are primarily carnivorous, feeding on soft-bodied invertebrates such as sea pens, soft corals, sea cucumbers, and jellyfish (DEE, 2017k). Both juveniles and adults have been observed foraging over shallow benthic habitats from northern Western Australia to south-east Queensland; although occurrences in pelagic foraging habitats also occur (DEE, 2017q). The Great Barrier Reef area is an important foraging area for this specie (DEE, 2017q).

Table 3-23: EPBC Act Listed Marine Reptile Species or Species Habitat that May Occur within the Environmental Sectors

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Turtles															
Caretta caretta	Loggerhead Turtle	E	✓	✓	*	[1]	BLO	FKO	BLO		LO	BKO	BKO*n, i	LO	LO
Chelonia mydas	Green Turtle	V	✓	✓	*	[1]	MO	MO	FKO	MO	MO	FKO	BKO*n, i,f	LO	LO
Dermochelys coriacea	Leatherback Turtle	E	✓	✓	*	[1], [2], [3]	FKO	FKO	FKO	BLO	LO	FKO	BKO*n, i	LO	LO
Eretmochelys imbricata	Hawksbill Turtle	V	✓	✓		[1]			FKO			FKO	FKO	LO	LO
Lepidochelys olivacea	Olive Ridley Turtle	E	✓	✓		[1]							FKO		
Natator depressus	Flatback Turtle	V	✓	✓	*	[1]			FKO			FKO	BKO*n	LO	LO
Sea Snakes															
Aipysurus duboissi	Dubois' Seasnake			✓									MO		
Aipysurus laevis	Olive Seasnake			✓									MO		
Aipysurus mosaicus	Mosaic Sea Snake			✓									MO		

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Hydrophis kingii	Spectacled Seasnake			✓									MO		
Hydrophis major	Olive-headed Seasnake			✓									MO		
Emydocephalus annulatus	Turtle-headed Seasnake			✓									MO		
Hydrophis elegans	Elegant Seasnake			✓								MO	MO		
Hydrophis peronii	Horned Seasnake			✓									MO		
Hydrophis platura	Yellow-bellied Sea Snake			✓								MO	MO		
Hydrophis stokesii	Stoke's Seasnake			✓									MO		
Hydrophis hardwickii	Spine-bellied Seasnake			✓									MO		
Laticauda colubrina	Yellow-lipped Sea Krait			✓									MO		
Laticauda laticaudata	a sea krait (1093)			✓									MO		
Crocodile															
Crocodylus prorsus	Salt-water Crocodile		✓	✓									LO		

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Threatened Species: • V Vulnerable • E Endangered • CE Critically Endangered Migratory Species: • M Marine • W Wetland • T Terrestrial Biologically Important Area • * BIA Present • a Aggregation • b Breeding • f Foraging	Type of Presence: MO Species of species habitat may occur within area LO Species or species habitat likely to occur within are KO Species or species habitat known to occur within area FKO Foraging, feeding or related behaviour known to occur within area BLO Breeding likely to occur within area BKO Breeding known to occur within area	Plan Reference: [1] Recovery Plan for Marine Turtles in Australia, 2017-2027 (DEE, 2017k) [2] Approved Conservation Advice for *Dermochelys coriacea* (Leatherback Turtle) (TSSC, 2008c) [3] Commonwealth Listing Advice on *Dermochelys coriacea* (TSSC, 2009)												

Table 3-24: Marine Reptile Threatened Species Management Advice Relevant to Petroleum Activities within Applicable Amplitude Energy Operating Areas

Species	Conservation Advice/Recovery Plan	Key Threats relevant to Petroleum Activities	Management Actions relevant to activities within applicable Amplitude operating areas
• Loggerhead Turtle • Green Turtle • Leatherback Turtle • Hawksbill Turtle • Olive Ridley Turtle • Flatback Turtle	Recovery Plan for Marine Turtles in Australia, 2017-2027 (DEE, 2017k)	• Marine debris • Chemical discharge • Light pollution • Habitat modification • Vessel disturbance • Noise interference	• Marine pollution: Evaluate risk of oil spill impact to marine turtles and, if required, appropriate mitigation measures are implemented. • Marine debris: Evaluate risk of marine debris (including risk of entanglement and/or ingestion) and, if required, appropriate mitigation measures are implemented. • Noise interference: Evaluate risk of noise impacts to marine turtles and, if required, appropriate mitigation measures are implemented. • Light interference: Evaluate risk of light impacts to marine turtles and, if required, appropriate mitigation measures are implemented. • Vessel disturbance**:** Evaluate risk of vessel strikes and, if required, appropriate mitigation measures are implemented.
Leatherback Turtle	Approved Conservation Advice for *Dermochelys coriacea* (Leatherback Turtle) (TSSC, 2008c)	• Ingestion of marine debris • Boat strike • Degradation of foraging areas and changes to breeding sites	See above (for Recovery Plan for Marine Turtles in Australia, 2017-2027)

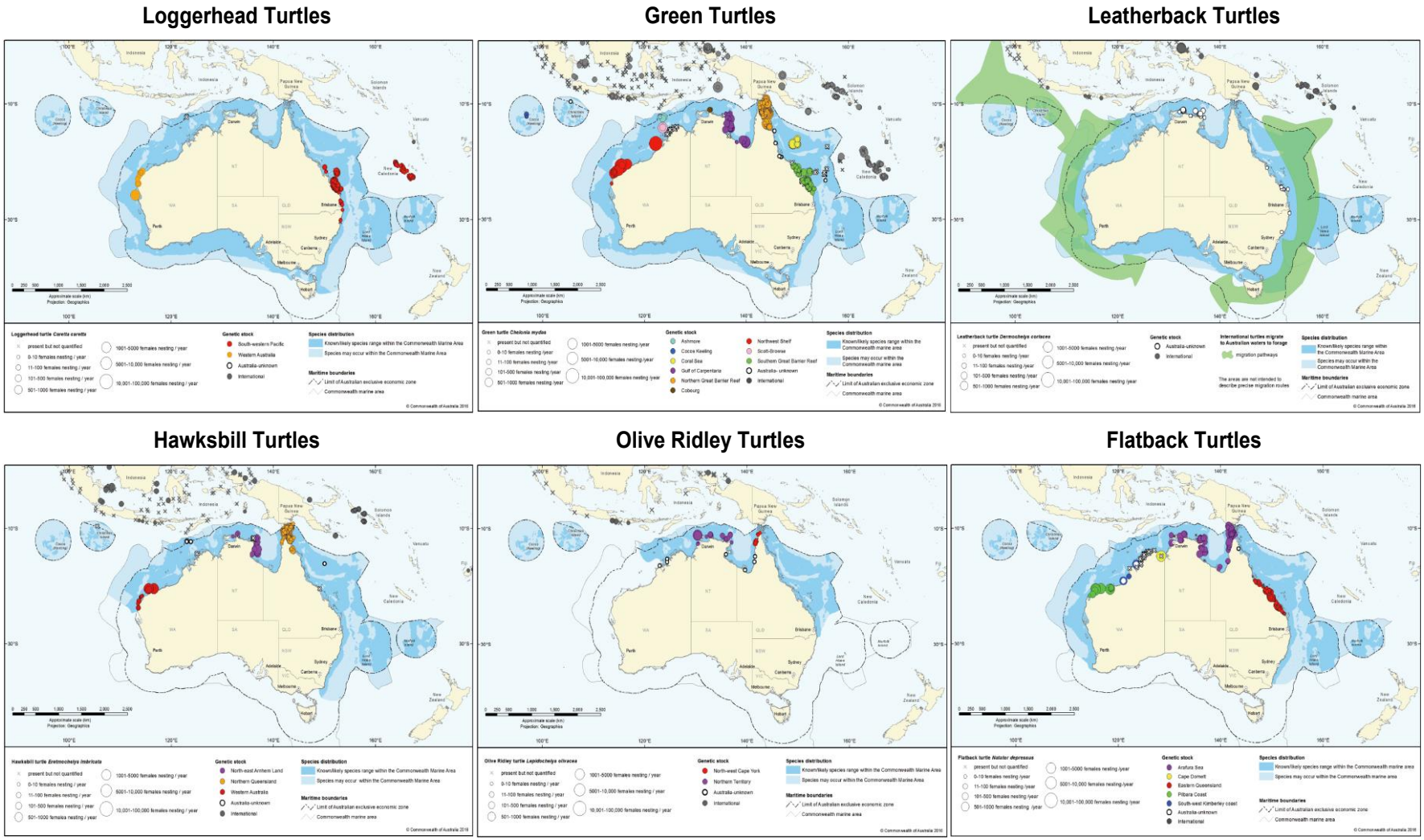


Figure 3-41: Marine Turtle Nesting Sites in Australia and Surrounding Regions (Source: DEE, 2017k)

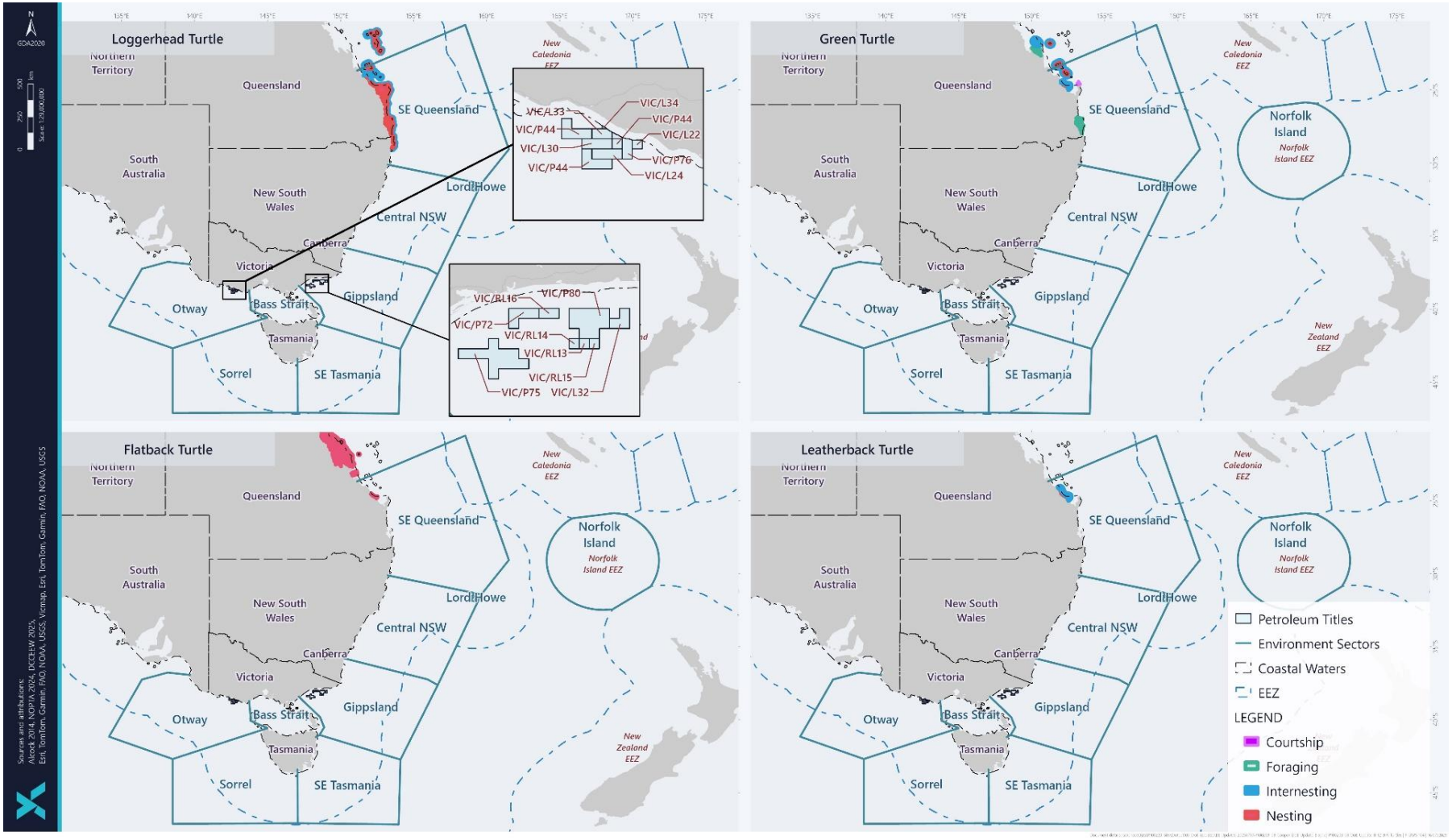


Figure 3-42: BIAs and Critical Habitat for the Loggerhead, Green, Leatherback and Flatback Turtles

Table 3-25: Nesting and Internesting Areas Identified as Critical Habitat[1] for Marine Turtles present within the Environmental Sectors

Species (Genetic Stock)	Nesting Locations	Internesting Buffer	Time of Year
Loggerhead Turtles (South-west Pacific)	Coastal beaches from Elliot River to Bustard Head, Swain Reefs. Tryon, Capriconia-Bunker Group, Pumistone Passage to Double Island Point.	20 km	Oct–Mar
Green Turtles (Southern GBR)	Islands of the Capriconia-Bunker Group, Wreck Rock to Burnett Head	20 km	Oct–Apr
Flatback Turtles (Eastern Queensland)	Curtis Island, Mon Repos	60 km	Oct–Mar

[1] Critical habitat to the survival of a marine turtle species was determined by a panel of experts and includes habitat for at least 70% of nesting for the stock (DEE, 2017k).

3.16 Marine Mammals

There are four pinniped, one sirenian, 28 whales, 19 dolphins, and one porpoise species (or species habitat) that may occur within the Environmental Sectors; this includes species classified as threatened and migratory (Table 3-27). A list of the relevant conservation advice and/or recovery plans is also provided in Table 3-26, with relevant key threats and management actions further discussed in Table 3-27. The type of presence varies between species and location, and includes important behaviours (e.g. foraging, breeding) for some species (Table 3-27).

3.16.1 Pinnipeds

The **New Zealand fur-seal** (long-nosed fur-seal) and the **Australian fur-seal** have the widest range of the pinnipeds, occurring in coastal regions from South Australia through to New South Wales (Table 3-26). While breeding for the New Zealand fur-seal in Australian waters, does occur along the coasts of Victoria at Kanowna Island, Deen Maar, The Skerries and Cape Bridgewater and southern Tasmania at Flat Witch, Maatsuyker and Tasman Islands(Table 3-26, Figure 3-43), the main breeding colonies (accounting for over 80% of the national population) are located further west in Western and South Australia (i.e. outside of the defined Environmental Sectors) (Kirkwood et al, 2009; DSEWPaC, 2012c). Conversely, the main breeding locations for the Australian fur-seal are within the Environmental Sectors, typically on islands within Bass Strait (Table 3-26, Figure 3-43) (DEE, 2017r; Kirkwood et al., 2010). New Zealand fur-seal breeding colonies are typically found in rocky habitat with jumbled boulders; Australian fur-seal prefer flatter rocky shelves (Shaughnessy, 1999). Colonies for both species are typically occupied year-round, with greater activity during breeding seasons (Shaughnessy, 1999; DEE, 2017r). There are 20 Australian fur seal breeding colonies, all located at islands within Bass Strait; the largest colonies occurring at Deen Maar and Seal Rocks off the Victorian coast (McIntosh, 2018).

Numbers of Australian fur-seals on Montague Island (New South Wales), fluctuate through the year, with peak numbers occurring in September and October; this reflects the northward migration over the winter, and the subsequent return to the breeding colonies of the Bass Strait in late spring (DEE, 2017r). The Australian and New Zealand fur-seals have been recorded using Beware Reef (approximately 40 km north-west of the Sole wells, and 50 km north-northeast of the BMG wells) as a haul-out site (Parks Victoria, 2017).

Reports by Arnould and Kirkwood (2008 and 2011) tracked the foraging habits of female Australian fur seals from four breeding sites in northern Bass Strait during the winters of 2001-2003. The studies found that all individuals foraged over the shallow continental shelf of Bass Strait and none of the foraging trips recorded any individuals venturing beyond the continental shelf-edge of Bass Strait. This data supports earlier studies that suggested the species is an exclusively benthic forager, although will opportunistically hunt throughout their transit to feeding grounds. Analysis of habitat use indicated that individuals selected areas with depths of 60–80 m and sea surface temperature of 16.0-16.8^{o}C with several areas regularly frequented and considered ‘hot spots’, while others with similar bathymetries were never entered by the individuals in this study. Furthermore, while there was substantial inter-individual variation, most seals displayed some degree of foraging site fidelity (Arnould and Kirkwood, 2008 and 2011).

Hoskins et al (2015) considered the role of intensive foraging zones for Australian fur seal, finding that foraging intensity ‘hot spots’ occur in a mosaic throughout the Bass Basin (within the Bass strait), primarily to the SW of the known colonies. Diving data suggests that individuals were maximising their time within the benthic foraging zone.

Arnould and Kirkwood (2011) also evaluated the degree of overlap between foraging sites of female Australian fur seals and marine reserves. Foraging areas of seals tracked in this study overlapped with only two reserves of the South-east Commonwealth Marine Reserve Network for <1% of the time-at-sea. Very little overlap in foraging habitat use by lactating females and the network of reserves suggests that several important habitats in south-eastern Australian waters may be poorly represented in the current marine reserve network.

McIntosh et al. (2018) undertook a critical analysis of existing population data for Australian fur seal, which identified a drop in live pup numbers which could indicate stabilisation or decline in the population within the study area (SE Australia). The study concluded that further data was necessary to understand the reasons behind and implications of this perceived drop in live pup numbers, however stressed the importance of accurate population statistics for management.

Australian fur-seal populations are in a phase of slow recovery following near-extinction after commercial sealing during 18th and 19th centuries (Shaughnessy, 1999), with current populations thought to be <60% of estimated pre-exploitation levels (Arnould et al., 2015). All but one of the known 20 breeding colonies (total number quoted in McIntosh, 2018) occur on islands within Bass Strait, characterised by a shallow continental shelf region with a relatively uniform bathymetry (average depth 60 m) with few features and is considered to be a region of low primary productivity (Arnould et al., 2015). The Australian Fur-seal is considered to be IUCN “Lower Risk, conservation dependent” species due to the cessation of a “habitat specific conservation program” which due to the species’ slow recovery rate could lead to it be becoming Threatened if disturbance of breeding sites during the breeding season is ongoing (Shaughnessy, 1999). Critical habitat for Australian seals comprises breeding colonies of the terrestrially breeding species in Australian mainland waters (Shaughnessy, 1999) The largest breeding colonies are at Deen Maar and Seal Rocks in Victoria (McIntosh, 2018).

The **Australian sea-lion** is the only endemic, and least abundant, pinniped that breeds in Australia (DoE, 2015a). All current breeding populations are outside of the Environmental Sectors, being located from the Abrolhos Islands (Western Australia) to the Pages Islands (South Australia) (Table 3-26; Figure 3-43). The Australian sea-lion uses a variety of shoreline types but prefer the more sheltered side of islands and typically avoid rocky exposes coasts (Shaughnessy, 1999). The Australian sea-lion is considered to be a specialised benthic forager; i.e. it feeds primarily on the sea floor (DSEWPaC, 2013b). A foraging BIA for males occurs within the Great Australian Bight, Eyre Peninsula, Spencer Gulf, Investigator Passage, Gulf of St Vincent and Kangaroo Island. An additional foraging BIA for both males and females occurs at Kangaroo Island, Investigator Passage and the Gulf of St Vincent. The Australian sea-lion feeds on the continental shelf, most commonly in depths of 20–100 m, with adult males foraging further and into deeper waters (DSEWPaC, 2013b). They typically forage up to 60 km from their colony but can travel up to 190 km when over shelf waters (Shaughnessy, 1999).

Southern elephant seals are the largest of all seals and have a nearly circumpolar distribution. Main breeding colonies in Australian waters are located outside of the define Environmental Sectors at Heard and Macquarie Islands; however occasional pupping has been recorded on Maatsuyker Island, off the southern Tasmanian coast (Table 3-26) (Shaughnessy, 1999). Southern elephant seals spend most of their lives at sea and prefer to haul-out on gently sloping sandy and cobblestone beaches (but will also utilise sea ice, snow and rocky terraces) (TSSC, 2016c).

In practice, seals are frequently observed offshore and around vessels; hundreds of sightings of seals were recorded near vessels over the course of the BMG Closure Project – Phase 1 offshore Gippsland in 2024, Marine mammal observers for the project reported behaviours including foraging, milling and swimming.

Table 3-26: Known Breeding Locations (within the Environmental Sectors) for Pinnipeds

Species	Locations	Pupping Season
New Zealand Fur-seal	Remote islands off southern coast of Tasmania; the largest breeding colonies occur at Flat Witch, Maatsuyker and Tasman Islands. Kanowna Island, Deen Maar, The Skerries and Cape Bridgewater off the Victorian coast.	Nov–Jan
Australian Fur-seal	There are 20 breeding colonies, all located at islands within Bass Strait; the largest colonies occurring at Deen Maar and Seal Rocks off the Victorian coast (McIntosh, 2018).	Oct–Dec
Australian Sea-lion	None identified.	Asynchronous
Elephant Seal	Occasional pupping has been recorded on islands off the southern coast of Tasmania (Maatsuyker Island).	Sep–Nov

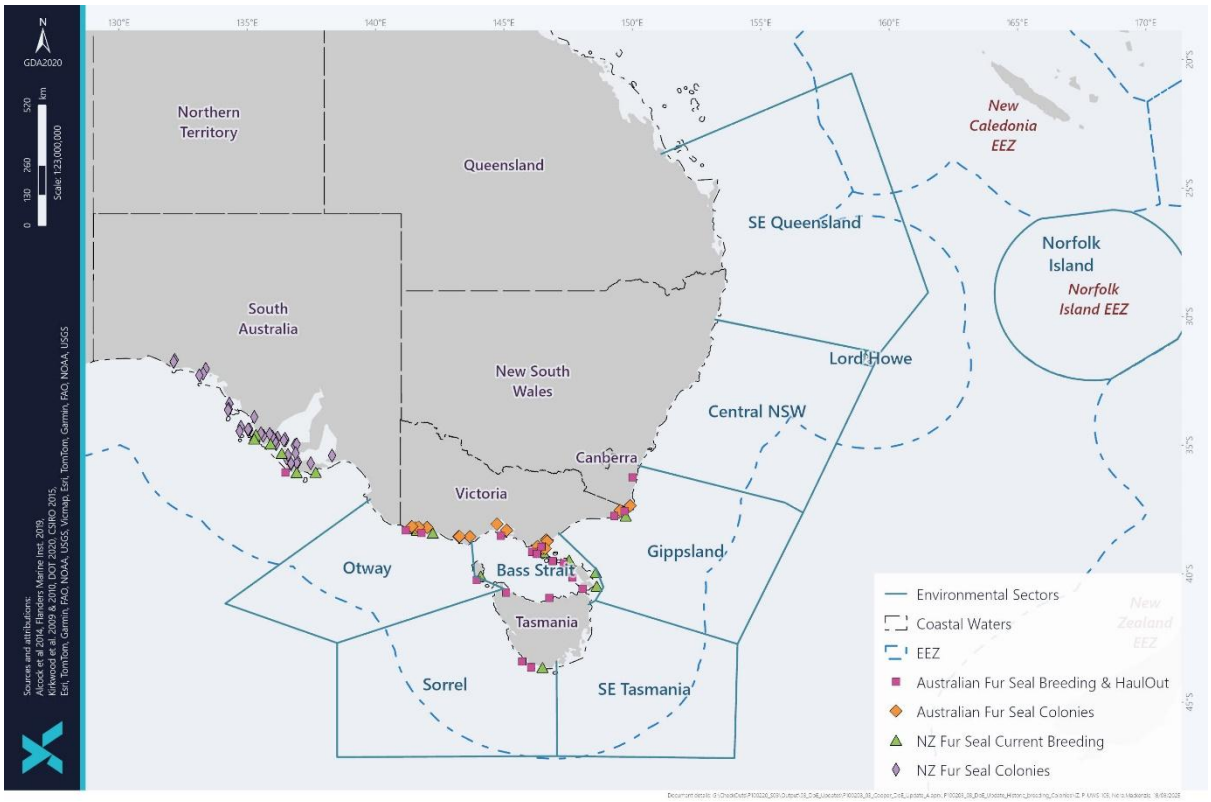


Figure 3-43: Historic and Current Colonies, Breeding and Haul out locations for the Australian and New Zealand (NZ) Fur-seals

3.16.2 Whales

3.16.2.1 Southern Right Whale

Southern right whales have a circumpolar distribution in the Southern Hemisphere occurring seasonally in all state coastal waters of Australia. Between April and November each year southern right whales may occur within Australian waters (Figure 3-44). There are two populations of the southern right whale within Australian waters (eastern and western). The geographical boundary between populations has been delineated as:

- Western population: West Australia and South Australia (west of Ceduna) (outside of Environmental Sectors).
- Eastern population: South Australia (east of Ceduna), Victoria, Tasmania, NSW and Queensland (within Environmental Sectors) (DCCEEW, 2024l).

The seasonal presence of the southern right whale in Australia correlates with breeding behaviours. The peak abundance period occurs between May and October each year when the southern right whale will predominately occur in shallow (< 10 m) coastal waters within 1 km of the coast (Charlton, et al., 2019, Smith, et al., 2019 cited in DCCEEW, 2024l). Breeding behaviours (i.e., mating, calving and nursing) typically occur within reproductive areas which have been defined by the National Recovery Plan for the Southern Right Whale (DCCEEW, 2024l) as habitat critical to the survival of the species (Figure 3-45). The importance of the reproductive BIAs to the species is twofold. Female southern right whales are known to show strong site fidelity to breeding locations, often returning to the same location to breed each cycle (approximately once every 3 years) and it is believed that females transmit this preference to offspring within the first year of their life (Valenzuela, et al., 2009, Carroll, et al., 2015, Carroll, et al., 2016 cited in DCCEEW, 2024l). Additionally, while partaking in breeding behaviours within Australian waters female southern right whales do not feed, resulting in a decline in energy stores. Considering their finite energy stores and the energetic costs of reproduction, environmental influences and/or disturbance has the potential to impose further demands on the whale's limited energy stores and affect the body condition of lactating females and the reproductive viability of offspring (DCCEEW, 2024l). Therefore, habitat critical to survival for the southern right whale has been identified as all reproductive BIAs across the species range (Figure 3-45).

As highly mobile migratory species, the southern right whale travels thousands of kilometres between habitats used for essential life functions. Similar to breeding areas, the southern right whale is known to show strong site fidelity to foraging locations. Similar to breeding areas the southern right whale is known to show strong site fidelity to foraging locations. The foraging ecology of the southern right whale is poorly understood, and observations of feeding whales are rare. Feeding has not been observed in coastal Australian waters, although other parts of the Australian EEZ may be utilised for feeding (Torres et al. 2013 cited in DCCEEW, 2024l). A counter-clockwise migration between foraging and breeding areas has been suggested whereby movements from Australian coastal waters include directly southern and western migration pathways (DCCEEW, 2024l). Migration areas include the movement of whales along the coast (highlighting the importance of coastal habitat connectivity) and the movement from offshore areas, including foraging areas, to nearshore and coastal areas (DCCEEW, 2024l). Along with the reproductive BIA a migration BIA has been defined for the southern right whale in Australian waters (Figure 3-52).

First Nations people around Australia have long had a strong connection to whales, which has significance as totemic ancestors to some groups. Whales that travel through Sea Country are recognised by Gunditjmara First Nations people within the Gunditjmara Nyamat Mirring Plan 2023-

2033 (GMTOAC, 2023). The southern right whale (Koontapool) migration which occurs along the Victorian coast provides known resting and feeding sites for the species, and safe havens for mothers with calves (DCCEEW, 2024l). First Nations people's cultural heritage, including identified values and sensitivities are further described in Section 5.6.1.

The south-eastern population of southern right whales currently have one established calving ground located at Logans Beach, Warrnambool in south-west Victoria, located ~25 km northwest of the Casino Henry Netherby Development. A sighting of two southern right whales was reported during Amplitude Energy projects in the Otway region in 2018. Sighting cues were body and blow. The sighting was in April, which may seem unusually early for southern right whale occurrence in the region, though is not unprecedented; the ALA reports eight southern right whale sightings in April between 2000 and 2019.

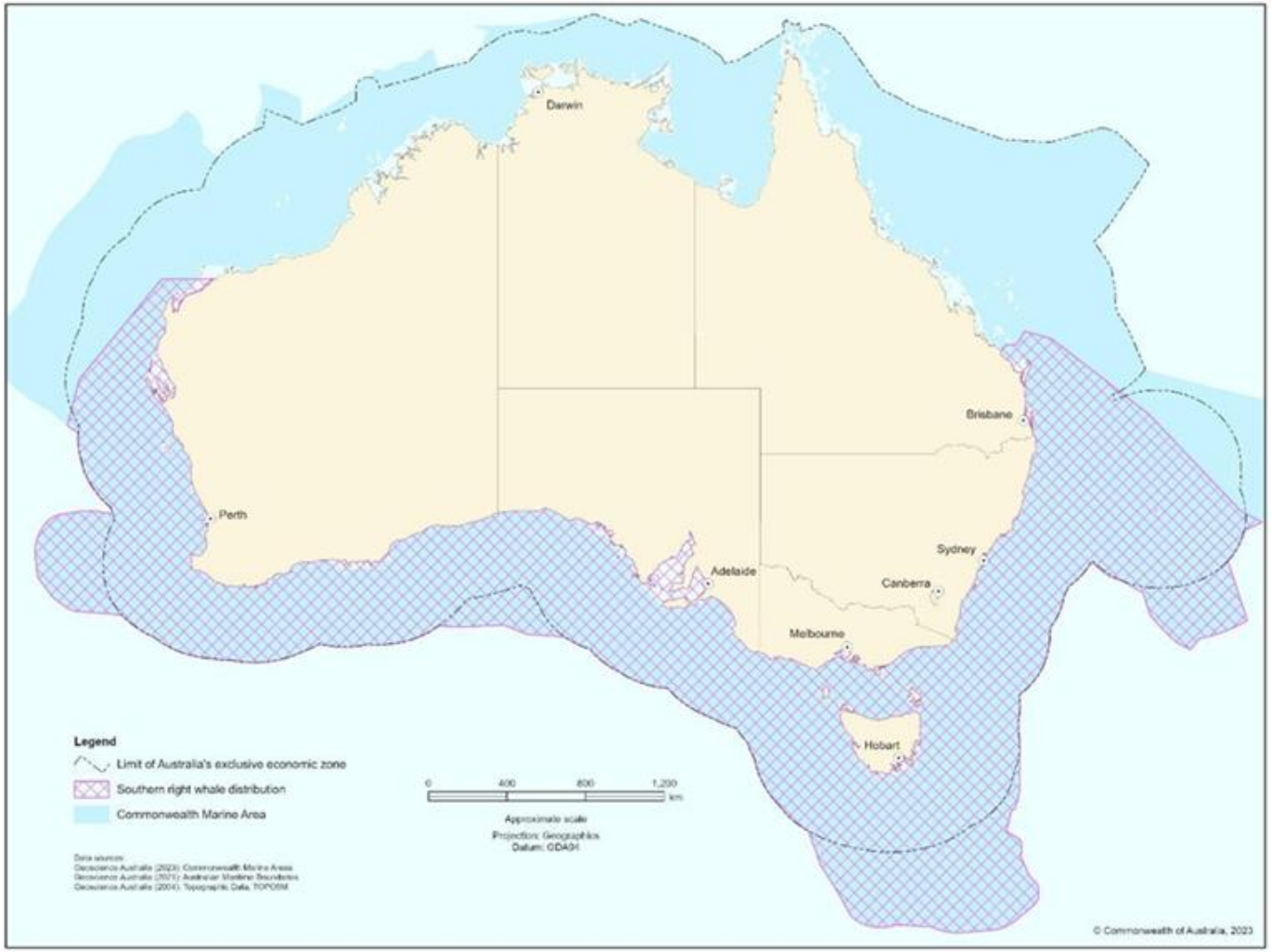


Figure 3-44: Spatial Distribution of the Southern Right Whale within the Commonwealth Marine Area and State Waters (DCCEEW, 2024l)

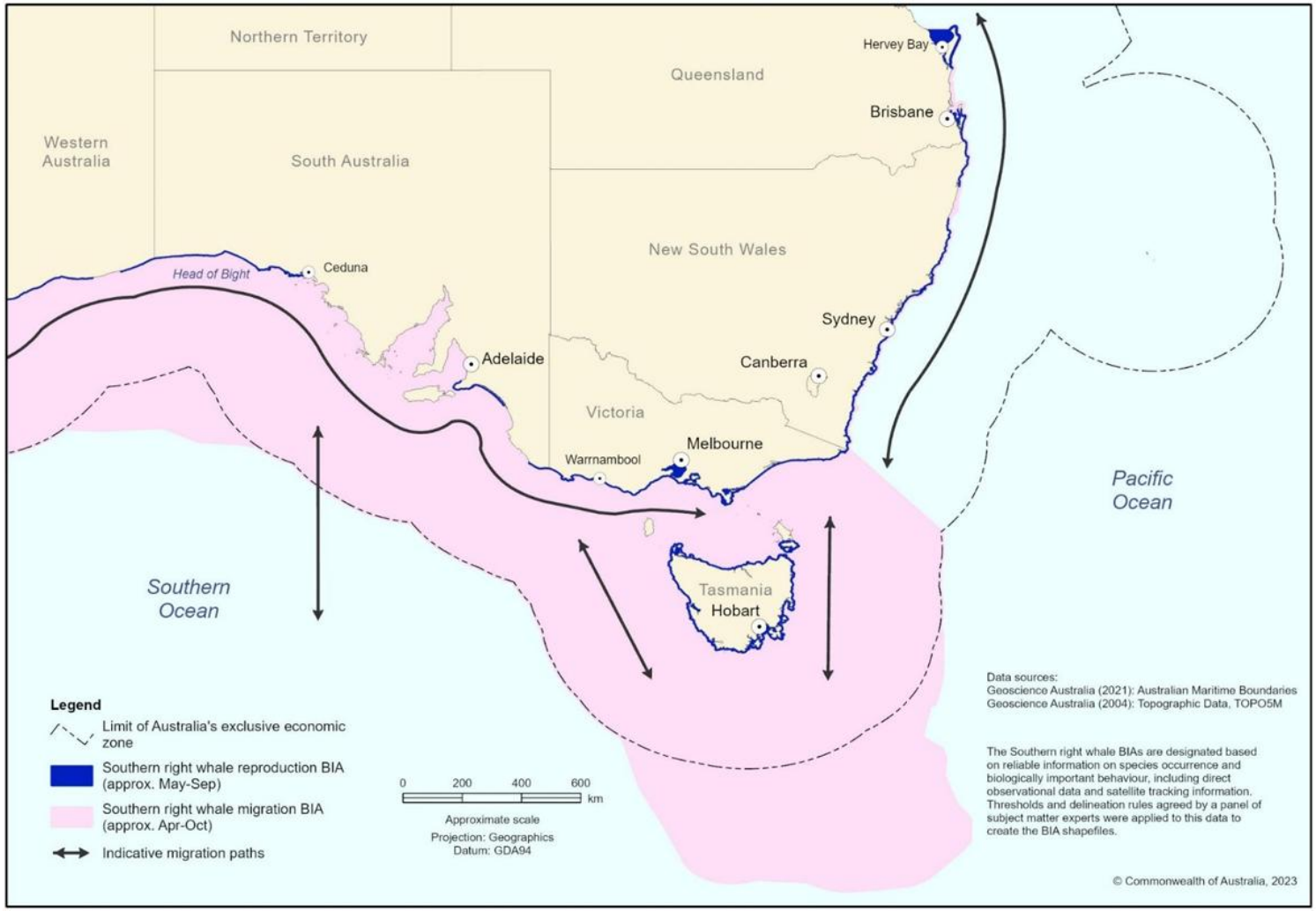


Figure 3-45: Southern Right whale Biologically Important Areas and Habitat Critical to the Survival (Reproduction BIA) in Eastern Australia (DCCEEW, 2024l)

3.16.2.2 Humpback Whale

Humpback whales have a near global distribution, migrating annually between high latitude feeding areas and low latitude breeding and calving areas; the Australian migration period is from May to November each year (Figure 3-51) (TSSC, 2015i). Peak migration time occurs between June and July each year (northern migration); there has been no such peak observed during the southern migration (Figure 3-51) (TSSC, 2015i). Predominantly humpback whales migrate within 50 km of the coast of mainland Australia (TSSC, 2015i). There are some narrow corridors along the migration pathways where the whale population passes within 30 km of the coast, including east of Moreton Island (Queensland) and Cape Byron (New South Wales).

Known calving areas for Humpback Whales within the Environmental Sectors are within the Great Barrier Reef area (approximately 14–27°S), and less frequently, along the migratory pathways (TSSC, 2015i). Predictive habitat modelling has identified two core areas for calving: the region east of Mackay, and the Capricorn and Bunker Island groups off Gladstone (Figure 3-51) (TSSC, 2015i). After breeding and calving during the winter months, the humpback whales migrate south. Resting areas are used by cow-calf pairs and attendant males during this southern migration; locations include Hervey Bay and Moreton Bay (Queensland), and Twofold Bay and Jervis Bay (New South Wales) (Figure 3-51, Figure 3-53). A BIA for the humpback whale, for migration and breeding, has been identified along the east coast of Australia (Figure 3-53). Humpback whales in the southern Hemisphere primarily feed on Antarctic krill (*Euphausia superba*) (TSSC, 2015i). While most feeding grounds are located south of Australian waters, there are some feeding grounds that are regularly used on the southern migration in Australian coastal waters: off the coast of Eden in New South Wales, and east coast of Tasmania (TSSC, 2015i).

Humpback whales have been sighted during Amplitude Energy projects in the Gippsland region, including multiple sightings 2018, 2019 and 2023. Many of the sightings were of whales moving in close proximity to vessels. Over the course of a 33-day period of in-field and in-transit activities in 2023 in the Gippsland, there were approximately 435 whales sighted by marine mammal observers on board the work vessel (Figure 3-46). Sightings were primarily of humpback whales undertaking their southerly migration, including mothers and calves. Whales were observed at distances between 0.05 km and 6.2 km from the vessel. Behaviours observed include fast and slow travel, milling and surface active (e.g. fin slapping and breaching), with the majority being surface active and slow travel within 3 km of the vessel (Figure 3-47).

Humpback whales feed primarily on krill in Antarctic waters south of 55°S, though opportunistic feeding during migration has been observed in Eden, NSW (DoE, 2025). A foraging area (Figure 3-53) for the Humpback Whale occurs along the NSW-QLD border to Eden, which corresponds with the migration (North and South) BIA. which is overlapped by the Environmental Sectors (Figure 3-53). In 2022, the humpback whales EPBC threatened species status was removed due to significant population recovery (TSSC, 2022). The Humpback Whale remains a MNES under the EPBC Act as a listed Migratory Species, and as a Cetacean.

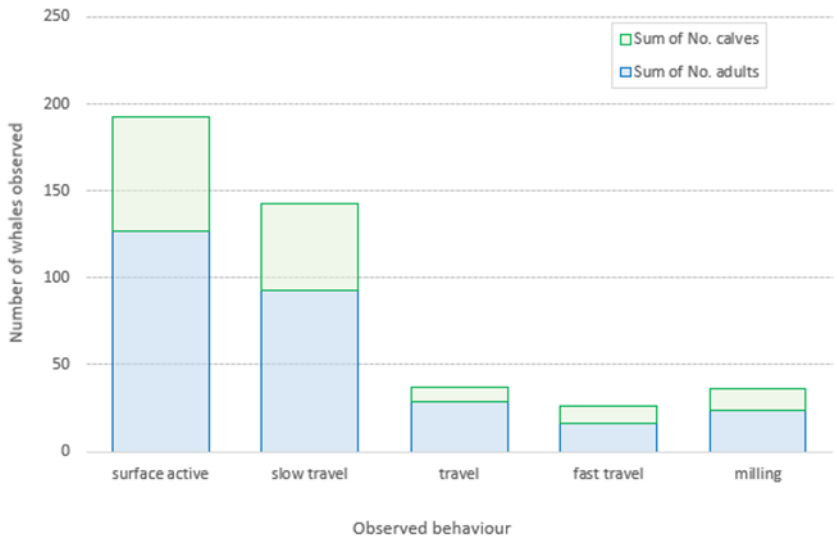


Figure 3-46: Whale Observations (behaviour) (Source: Amplitude Energy Vessel Based IMR Activity in Gippsland 2023)

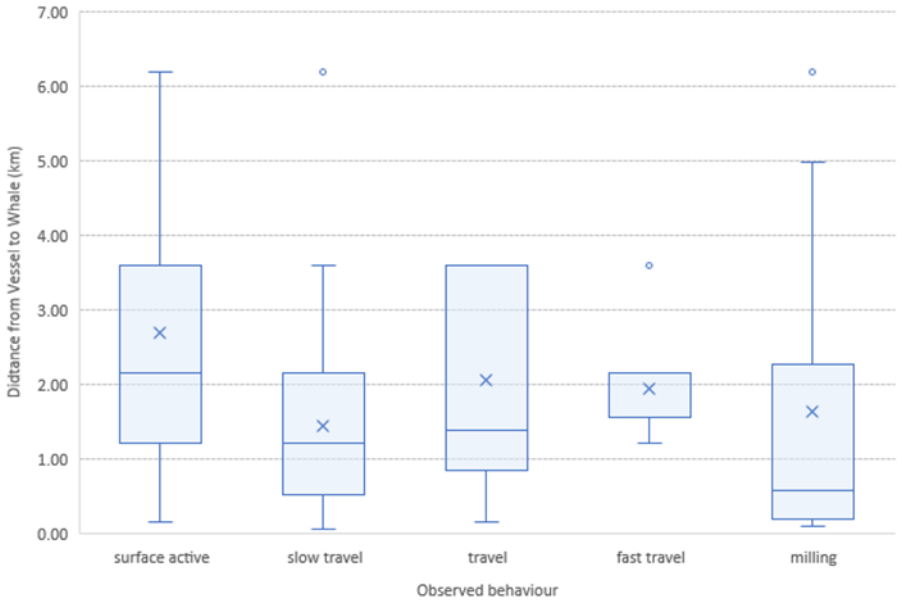


Figure 3-47: Whale observations (behaviour with distance from vessel) (Source: Amplitude Energy Vessel Based IMR Activity in Gippsland 2023)

3.16.2.3 Blue Whale

The blue whale is a large baleen whale with a broad spatial distribution. Three groups of blue whale - Eastern Indian Ocean pygmy blue, South West Pacific Ocean pygmy blue, and Antarctic blue, have been recorded acoustically in the Bass Strait (McCauley et al. 2018), with scientists now considering the Bass Strait to be the boundary between the East Indian Ocean and South West Pacific Ocean populations. No East Indian Ocean pygmy blues have been recorded on Australia's east coast

(Balcazar et al. 2015) or in New Zealand, where South West Pacific Ocean pygmy blue gather to forage in the South Taranaki Bight west of Cook Strait (Barlow et al. 2018).

There are two subspecies of blue whale that occur within Australian waters: Antarctic blue whale and the pygmy blue whale. There are populations of pygmy blue whales that are known to visit Australian waters; Indo-Australian (IA) pygmy blue whales occupying or passing through waters from Indonesia to western and southern Australia, and the Tasman-Pacific (TP) pygmy blue whale occupying or passing through waters in southeast Australia and the Pacific (DoE 2015d).

Blue whales have the highest known prey requirements, consuming up to two tonnes of krill per day (DoE, 2015d). Blue whale sightings in Australia are widespread, and much of the shelf and coastal waters are unlikely to hold significance for this species with the exception of some foraging locations. Australia has three known seasonal feeding aggregations of pygmy blue whales; two occurs within the Otway Environmental Sector: adjacent to the Bonney Upwelling system off South Australia and Victoria (Figure 3-54) and south along the sub-tropical convergence zone within the Bass Strait between Victoria and Tasmania (Thums et al., 2022). BIAs for the pygmy blue whale are illustrated in Figure 3-54.

The IA Pygmy blue whale population shows three migratory stages around Australia, a “southbound migratory stage” where whales travel southwards from Indonesian waters down the WA coast, mostly over October to December but possibly into January of the following year, a protracted “southern Australian stage” (January to June) where animals spread across southern waters of the Indian Ocean and south of Australia, then a northbound migratory stage (April to August) where whales meander north back to Indonesia again (McCauley et al., 2018).

Pygmy blue whale (TP blue whale population) is identified as possibly exhibiting foraging behaviours within the Gippsland Environmental Sector (Figure 3-54). The pygmy blue whale possible foraging BIA has been identified where evidence for feeding is based on limited direct observations or through indirect evidence, such as occurrence of krill in close proximity of whales, or satellite tagged whales showing circling tracks. Blue whales travel through on a seasonal basis, possibly as part of their migratory route (Commonwealth of Australia, 2015a). Blue whale feeding grounds are typically in areas of high primary productivity that can support sufficient densities of krill, such as oceanographic upwelling or frontal systems (DoE, 2015d). Typically, blue whale migrates between breeding grounds (low latitudes) where mating and calving take place in the winter, to feeding grounds (high latitudes) where foraging occurs in the summer.

IA Pygmy blue whales typically forage off eastern South Australia and Victoria (e.g. between Robe, SA and Cape Otway, Vic) between January and April (DoE, 2015d), with some studies suggesting foraging could occur for an extended season of November to May (Gill et al., 2002; Gill et al., 2011). The abundance of whales in the area varies within and between seasons and is closely in-sync with the strength of the Bonney Upwelling (DoE, 2015d., Gill et al., 2011, McCauley et al., 2018). This has been confirmed by ongoing studies from 2002-2011, which conclude that blue whales are twice as likely to be found to the west of Portland (Western side of the Bass strait) than to it’s east (Gill, 2011). Blue whale presence in the Bonney Upwelling is associated with several seascape variables, but with sea surface temperature appearing to play a major role (Gill et al., 2011). Prey availability is also key, with krill likely responding to prevailing environmental conditions from previous seasons (Szesciorka et al., 2020). This makes upwelling events and subsequent foraging presence difficult to predict.

A recent study analysed satellite tracking data for 38 Eastern Indian Ocean pygmy blue whales and applied movement models to identify relationships between whale occurrence and the environment and predict foraging and migration habitat suitability in Australia and Southeast Asia (Ferreira, et al.

2024). Where there was low movement persistence, behaviours such as foraging, or reproduction were assumed, where there was high movement persistence, migration was assumed. Results indicated that the depth of the water column was a top predictor of suitable habitat for most regions, however dynamic localised oceanic processes also influenced the probability of occurrence (Ferreira, et al. 2024). In southern Australia suitable habitat was represented as a semi-continuous area encompassing both shelf and slope habitats (43% of suitable habitat on the shelf and 48% on the slope) (Ferreira, et al. 2024). Suitable foraging habitat occurred on the slope and shelf break throughout Australia with the use of the continental shelf in south west and southern Australia (Figure 3-48) (Ferreira, et al. 2024). While the shelf off the Bonney Upwelling, Great Australian Bight and southern Western Australia and the slope off WA coast was identified as suitable migration habitat (Figure 3-48) (Ferreira, et al. 2024). It is important to note that the relationship between whale occurrence and environment is not static, and the findings presented in Figure 3-48(a) must be considered within a temporal context.

Outside of these main feeding areas, foraging areas for pygmy blue whale include the Bass Strait, and diving and presumably feeding at depth off the west coast of Tasmania (DoE, 2015d). There is a paucity of data to support predictions of presence in these areas adjacent to the key feeding grounds of the Bonney Upwelling, and even less data available for waters in the Gippsland region.

The unique song of TP pygmy blue whales feeding in New Zealand predominates in the western South Pacific (Balcazar et al., 2015; Barlow et al., 2018). New Zealand subpopulations of pygmy blue whale are typically found in New Zealand waters year-round, with studies indicating that individuals do not move far from feeding grounds in the South Taranaki Bight (Barlow et al., 2020).

Sightings of NZ pygmy blue whale have been recorded in the SE region, and Antarctic blue whale have been recorded on noise loggers. It is possible that Antarctic blue whales and TP pygmy blue whales may be present within the Gippsland offshore region. Based on current knowledge of patterns of behaviour elsewhere, it can be assumed that if blue whales are sighted, they are most likely foraging (Peter Gill pers comms July 2021).

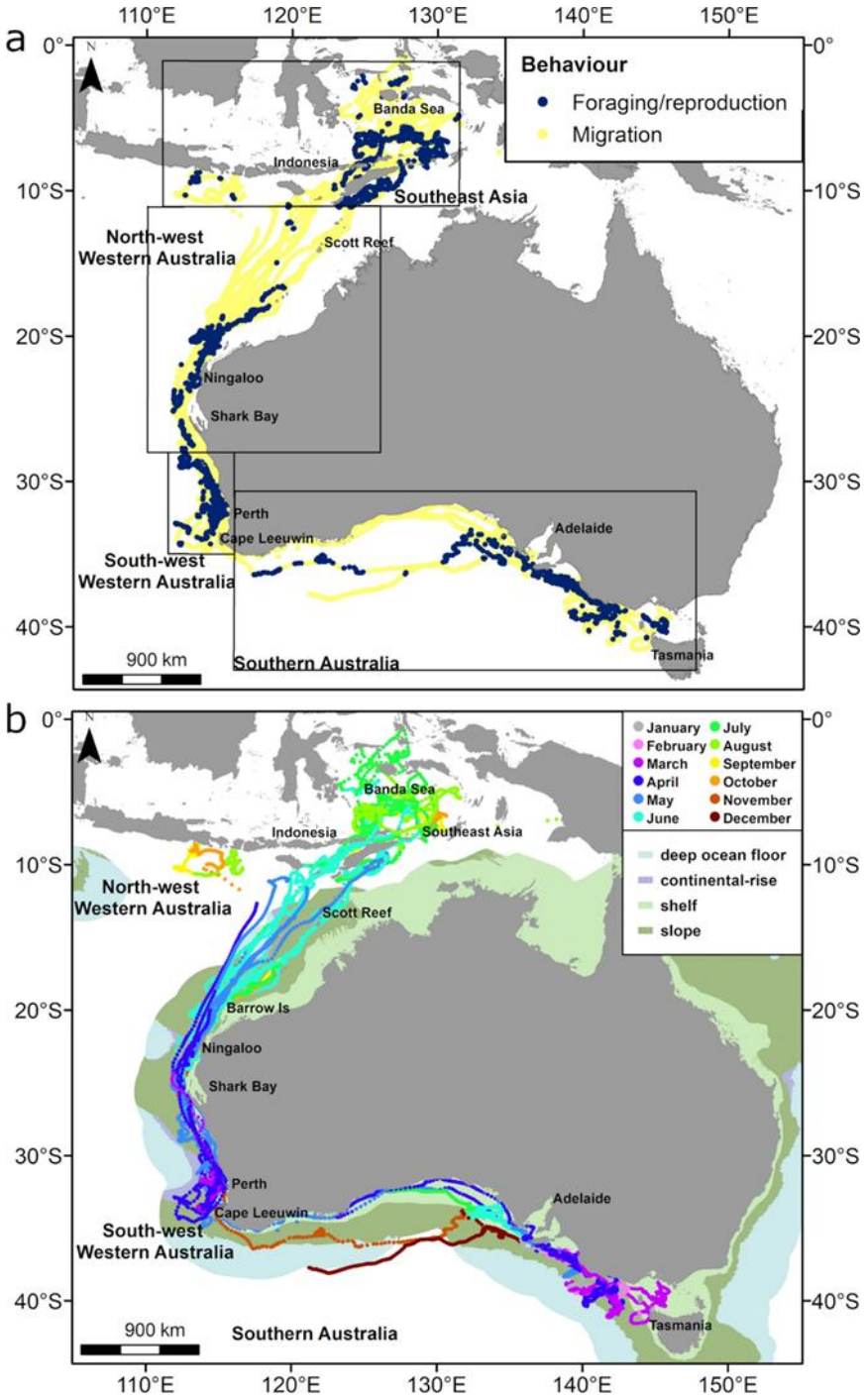


Figure 3-48: Predicted Suitable Habitats for Foraging and Migration in Eastern Indian Ocean Pygmy Blue Whales from Satellite Tracking (Source: Ferreira, et al. 2024)

Sightings of blue whales in the Gippsland region have been reported recently in June 2020 (2 sightings, CGG pers comms), and historically, individual sightings in October and November (ALA database). The ALA holds <10 sightings records since the 1970's, though based on historical catch data (Cwth Australia 2015), the low sightings may in part be a function of lower levels of monitoring compared to the Otway. Contemporary acoustic recording of blue whales in the region are considered to be more reliable than historic sightings; based on their migration patterns (as described above), and acoustic detection of both TP and Antarctic blue whale populations within the

Bass Strait (McCauley et al., 2018), blue whales may be more likely to be moving through the region in April, May and June; outside of this time period, presence is very unlikely. April and June are considered shoulder times given detections of both Antarctic Blues and TP pygmy in central Bass Strait blues between April-June followed by detections of whales moving north, off mid NSW and Tonga from June/July (Balthazaer et al. 2015) (Figure 3-49). McCauley et al. (2018) indicates that in some years there is evidence physical mechanisms drive productive water into the Bass Strait over April to May inferring this period as being potentially favourable for foraging in the region.

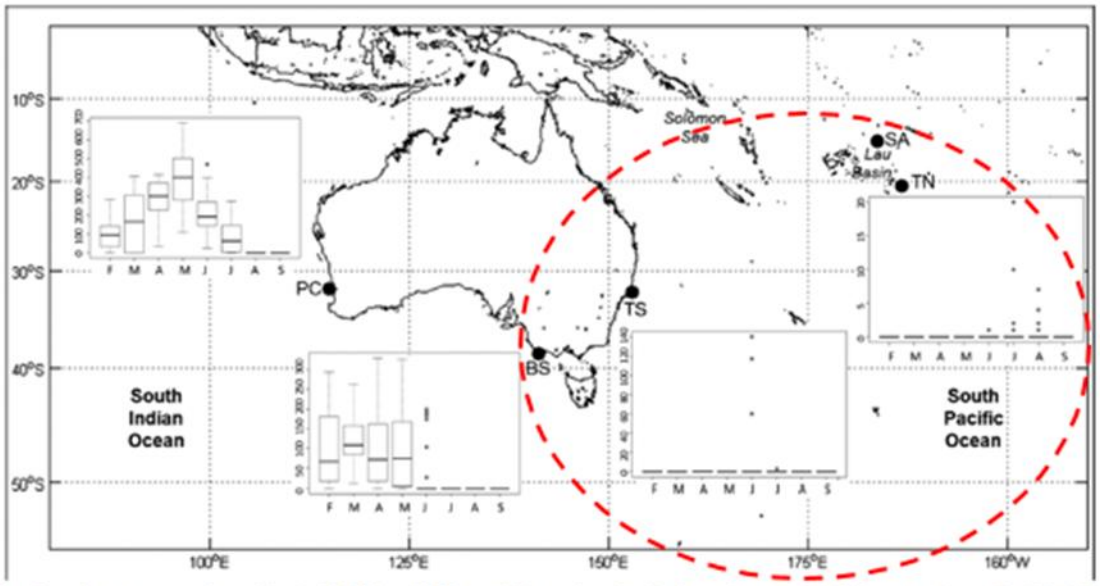


Fig. 2.—Box plots represent the median (with 0.25 and 0.75 quantile) number of calls detected per month (February to September) for AUSB at the PC = Perth Canyon and BS = Bass Strait and NZB at the TS = Tasman Sea and TN = Tonga. No AUSB or NZB whale calls were detected off SA = Samoa. Bars indicate maximum and minimum values and outliers are plotted as individual points.

Figure 3-49: Acoustic Detections of Blue Whale Populations in the Indian Ocean and Pacific Ocean (Source: Balcazar et al. 2015).

Studies published in 2023, and which review in detail the existing records base, indicate that these recent historical records of TP Pygmy blue whales in the Gippsland are considered to be vagrant individuals form the NZ pygmy blue whale population. Sightings of Antarctic blues are expected to be of those on migration to/from breeding grounds at lower latitudes (Barlow et al., 2023). Overall numbers of blue whales are expected to be low in the Gippsland region at any time of year, with the Gippsland being outside of predominant feeding grounds for any population of blue whales (Figure 3-50).

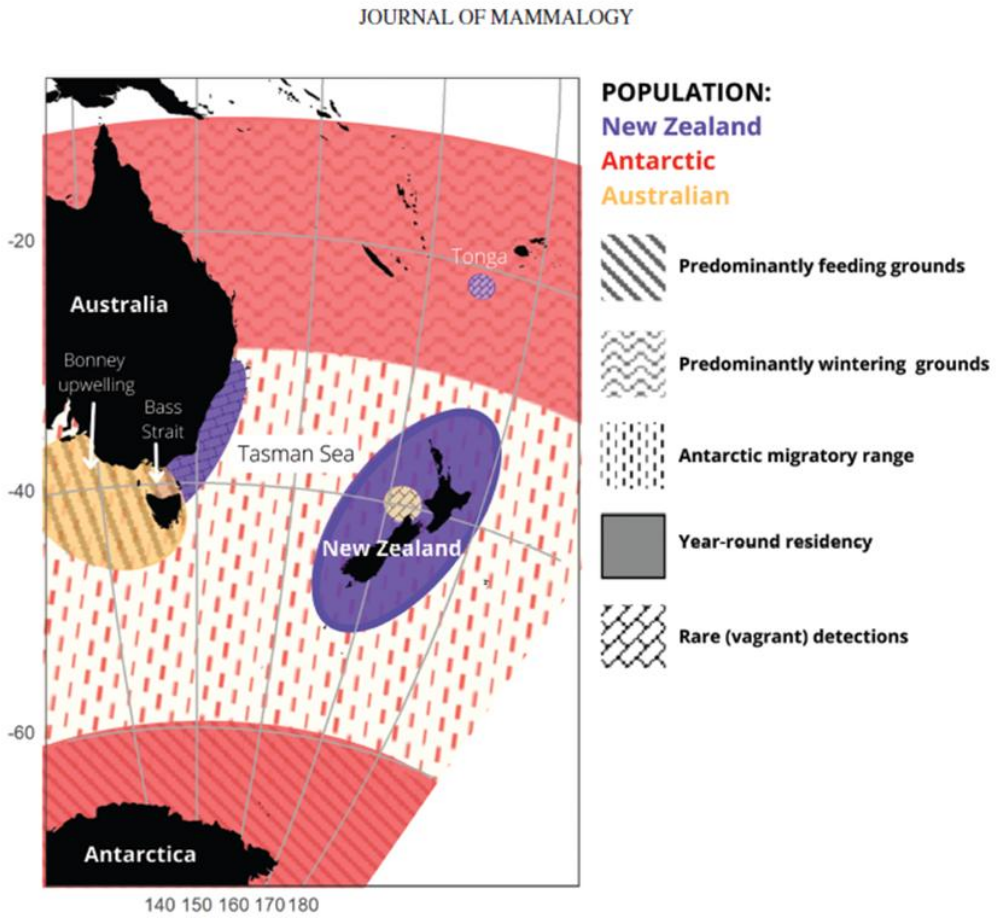


Figure 3-50: Conceptual Map Illustrating the Current Understanding of the Approximate Typical Range of each Blue Whale Population (Source: Barlow et al., 2023)

3.16.2.4 Sei Whale

Sei whales are considered a cosmopolitan species, ranging from polar to tropical waters, but tend to be found more offshore than other species of large whales. They show well-defined migratory movements between polar, temperate and tropical waters. Migratory movements are strictly north-south with little longitudinal dispersion.

Sei whales have been infrequently recorded in Australian waters; however occasional sightings have been recorded off Tasmania, New South Wales, Queensland and within the Great Australian Bight (DEE, 2017s). Sei whales typically feed between the Antarctic and Subtropical convergences, and their diet is planktonic crustacea, in particular copepods and amphipods (DEE, 2017s). However, sei whales have also been observed feeding on the continental shelf in the Bonney Upwelling region during November and May, suggesting the area may be used for opportunistic feeding (DEE, 2017s).

3.16.2.5 Fin Whale

Fin whales are considered a cosmopolitan species and occur from polar to tropical waters and are rarely in inshore waters. They show well-defined migratory movements between polar, temperate and tropical waters. Migratory movements are strictly north–south with little longitudinal dispersion.

The distribution of fin whales in Australian waters is uncertain, but they have been recorded in Commonwealth waters off most States (the species is rarely found in inshore waters) (DEE, 2017t). Fin whales frequently lunge or skim feed, at or near the surface, feeding on planktonic crustacea, some fish and cephalopods (DEE, 2017t). Fin whales generally feed in high latitudes, however depending upon prey availability and locality, it may also feed in lower latitudes. Fin whales have been observed in waters off the Bonney Upwelling during November and May, suggesting the region may be used for opportunistic feeding (DEE, 2017t). Fin whales have also been detected acoustically south of Portland, Victoria (Erbe et al., 2016).

3.16.2.6 Pygmy Right Whale

Records of pygmy right whales in Australian waters are distributed between 32°S and 47°S but are not uniformly spread around the coast (DEE, 2017u). Areas of coastal upwelling events appear to be an important component regulating pygmy right whale distribution. Pygmy right whales have primarily been recorded in areas associated with upwellings and with high zooplankton abundance, particularly copepods and small euphausiids which constitute their main prey (DEE, 2017u). There is some evidence to indicate that the area south of 41°S is important for weaned pygmy right whales, possibly because of the higher prey abundance in these waters (DEE, 2017u).

3.16.2.7 Bryde's Whale

The Bryde's whale can be found in tropical and warm temperate waters exceeding 16.3°C, but generally in the 20°C isotherm is where they stay year-round (DoE, 2025). The species appears to have coastal and offshore forms which display different life cycle characteristics such as migration patterns and feeding preferences. In Australia, the Bryde's Whale has been recorded in all states except the Northern Territory. Typically, the coastal form is restricted to within 32 km from the coast, while the offshore form occupies waters over 80 km from the coast (DoE, 2025).

The Bryde's whale is considered an opportunistic feeder, consuming any shoaling prey that is available and frequently exploit the activities of other predators. There is no evidence of large-scale movements of the inshore form of the species. However, it appears that the offshore form may migrate seasonally, heading towards warmer tropical waters during the winter (DoE, 2025). The waters of Bass Strait are not known feeding, resting or calving grounds for Bryde's whales, although feeding may occur opportunistically where sufficient krill density is present.

3.16.2.8 Antarctic Minke Whale

Antarctic minke whales appear to primarily occupy offshore and pelagic habitats and can be found throughout the southern hemisphere within cold temperate to Antarctic waters (DoE, 2025). In Australia, the Antarctic minke whale has been recorded in all states except the Northern Territory. Little is known about their foraging or breeding locations in Australian waters. The species undergo extensive migration between the summer Antarctic feeding grounds and winter sub-tropical to tropical breeding grounds (DoE, 2025). The Antarctic minke whale feeds primarily on Antarctic krill and do not appear to feed much whilst in the breeding grounds of lower latitudes (DoE, 2025).

3.16.2.9 Sperm Whale

The sperm whale inhabits a large geographical range from the polar regions to the equator, typically occurring offshore in deep waters (>600 m). In Australia, the sperm whale has been recorded in all

states, with concentrations of individuals known to occur at the shelf edge off Albany WA and south-west of Kangaroo Island (DoE, 2025).

In the open ocean, there is a generalised movement of sperm whales southwards in summer, and corresponding movement northwards in winter, particularly for males (DoE, 2025). Male and female sperm whales exhibit different distributions. Females mostly inhabit tropical and subtropical waters while adult males are found at higher latitudes (apart from the breeding season) in ice-free deep waters or along the edges of continental shelves (Chambault et al., 2021). After accompanying the females from 4 to 21 years, young males may leave their female relatives to migrate towards higher latitudes. The diet of the sperm whale is primarily composed of oceanic cephalopods, however, may include demersal fishes, rays and sharks. Sperm whales are deep and prolonged divers and are able to forage throughout the entire water column, however, they seem to forage mainly on or near the bottom (DoE, 2025).

The species is considered to have a known foraging presence overlapping within some Environmental Sectors.

3.16.2.10 Killer Whale

The killer whale can be found throughout all oceans; however, they are found in highest concentrations in coastal waters and in cooler regions where productivity is high (DoE, 2025). In Australia, they are recorded in all states, with concentrations reported around Tasmania and frequent sightings in South Australia and Victoria. Individuals are most often seen in along the continental slope and on the shelf, particularly near seal colonies. Due to their cosmopolitan nature and ability to inhabit most marine environments the killer whale is difficult to characterise (DoE, 2025).

Killer whales make seasonal migrations. However, little is known about specific seasonal movement patterns as it is likely that movements are related to the movement of their prey. It is thought that some individuals migrate to Antarctica during the southern summer to prey on Antarctic minke whales and then migrate back to lower altitudes during the southern winter (DoE, 2025). The killer whale is an apex predator whose diet fluctuates seasonally and regionally. A 'resident' whale will eat mostly fish, while a 'transient' whale will feed on birds and marine mammals (DoE, 2025). Pack-hunting strategies have been reported in Australian waters for individuals preying on pods of whales or dolphins.

3.16.3 Dolphins

The Indo-Pacific humpback dolphin is found in coastal and estuarine waters of Queensland and New South Wales. Species have been recorded in the Great Sandy Strait, and Moreton Bay (Queensland), and further south to Cabarita Beach (northern New South Wales) (DSEWPaC, 2012d). They inhabit a variety of inshore (<20 m water depth) habitats including, inshore reefs, tidal and dredged channels, mangroves and river mouths. It is a generalist feeder, preying on bottom-dwelling and pelagic fish and cephalopods (DSEWPaC, 2012d). A BIA for both foraging and breeding has been identified in Queensland waters (Figure 3-55).

The Indian Ocean bottlenose dolphin is distributed continuously around Australia (DEE, 2017v). The Indian Ocean bottlenose dolphin occurs mainly in riverine and shallow coastal waters (on the shelf or around oceanic islands) (DSEWPaC, 2012d). Known populations include Jervis Bay, Twofold Bay, and Port Phillip Bay (New South Wales), and Moreton Bay and Hervey Bay (Queensland) (DSEWPaC, 2012d). Calving peaks occur in spring and summer or spring and autumn (DEE, 2017v). Gestation lasts approximately 12 months, so peak mating period coincides with peak calving period in each

location (DEE, 2017v). A BIA for both breeding has been identified within Queensland and New South Wales coastal waters (Figure 3-56).

A new species of dolphin, the Burrunan dolphin, has been identified and is considered endemic to south-eastern Australian waters (Charlton-Robb et al., 2011). The current distribution of the Burrunan dolphin ranges from South Australia, east to Victoria and south to Tasmania (Charlton-Robb et al., 2011). Resident populations have been found in Port Philip Bay (approx. 90 animals) and Gippsland Lakes (approx. 50 animals) (Charlton-Robb et al., 2011). A tentative sighting of a Burrunan dolphin was recorded during vessel transit for an Amplitude Energy project in September 2018 off Bullock Island Quay, Lakes Entrance. The sighting was reported to the Australian Marine Mammal Centre. This dolphin species does not yet appear in the DEE Species Profile and Threats Database (or consequently the Protected Matters Search tool) but has been added to the species listed within Table 3-27. In May 2013 the Burrunan dolphin was listed as threatened under Victoria's Flora and Fauna Guarantee Act 1988.

The dusky dolphin can be found throughout the southern hemisphere in temperate and sub-Antarctic regions, typically in association with cold currents. This species primarily occupies inshore habitats but may also be pelagic at times (DoE, 2025). In Australia, the dusky dolphin occurs along the southern coastline from WA to Tasmania. The seasonal reports of dusky dolphin sightings suggest a link with changes in oceanographic features in this region (DoE, 2025). For example, movement patterns may be linked to the position of the Subtropical Convergence and/or El Nino Southern Oscillation events (DoE, 2025). This species is generally considered a surface feeder that preys on schooling fish, cephalopods or other benthic prey.

Table 3-27: EPBC Act Listed Marine Mammal Species or Species Habitat that May Occur within the Environmental Sectors

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Pinnipeds															
Arctocephalus forsteri	New Zealand Fur-seal			✓			MO	MO	MO	BKO	MO	MO			
Arctocephalus pusillus	Australian Fur-seal			✓			BKO	BKO	MO	MO	MO	MO			
Neophoca cinerea	Australian Sea-lion	V		✓	*	[2]	KO								
Mirounga leonina	Southern Elephant Seal	V		✓		[3], [4]				BMO					
Sirenians															
Dugong dugon	Dugong		✓	✓								MO	KO		
Whales and other cetaceans															
Whales															
Balaenoptera acutorostrata	Minke Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO
Balaenoptera bonaerensis	Antarctic Minke Whale		✓				LO	LO	LO	LO	LO	LO	LO	LO	LO

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Balaenoptera borealis	Sei Whale	V	✓			[5]	FKO	FLO	FLO	FLO	FLO	FLO	FLO	LO	LO
Balaenoptera edeni	Bryde's Whale		✓				MO	MO	LO		MO	LO	LO	LO	LO
Balaenoptera musculus	Blue Whale	E	✓		*	[6]	FKO*d, f	FKO*f	LO*f	LO*f	LO*f	MO	MO	MO	MO
Balaenoptera omurai	Omura's Whale		✓										LO		
Balaenoptera physalus	Fin Whale	V	✓			[7]	FKO	FLO	FLO	FLO	FLO	FLO	FLO	LO	LO
Berardius arnuxii	Arnoux's Beaked Whale						MO	MO	MO	MO	MO	MO			MO
Caperea marginata	Pygmy Right Whale		✓				FLO	FMO	FLO	FMO	FMO	FLO			
Eubalaena australis	Southern Right Whale	E	✓		*	[8] [11]	BKO*m, r	KO*m, c	KO*m	KO*c	BKO*b, c	KO	LO	MO	MO
Feresa attenuata	Pygmy Killer Whale											MO		MO	MO
Globicephala macrorhynchus	Short-finned Pilot Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO
Globicephala melas	Long-finned Pilot Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Hyperoodon planifrons	Southern Bottlenose Whale						MO		MO	MO	MO	MO	MO		
Kogia breviceps	Pygmy Sperm Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO
Kogia simus	Dwarf Sperm Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO
Megaptera novaeangliae	Humpback Whale		✓		*	[9], [10]	KO	KO	KO*f	KO	FKO	KO*f,m	BKO*f, mr	MO	MO
Mesoplodon bowdoini	Andrew's Beaked Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO
Mesoplodon densirostris	Blainville's Beaked Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO
Mesoplodon ginkgodens	Gingko-toothed Beaked Whale								MO			MO	MO		
Mesoplodon grayi	Gray's Beaked Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO
Mesoplodon hectori	Hector's Beaked Whale						MO	MO	MO	MO	MO	MO			
Mesoplodon layardii	Strap-toothed Beaked Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO
Mesoplodon mirus	True's Beaked Whale						MO	MO	MO	MO	MO	MO		MO	MO

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Peponocephala electra	Melon-headed Whale											MO	MO	MO	MO
Physeter macrocephalus	Sperm Whale		✓				FKO	MO	MO	MO	MO	MO	MO	MO	MO
Tasmacetus shepherdi	Shepherd's Beaked Whale						MO		MO	MO	MO	MO			
Ziphius cavirostris	Cuvier's Beaked Whale						MO	MO	MO	MO	MO	MO	MO	MO	MO
Dolphins															
Delphinus delphis	Common Dolphin						MO	MO	MO	MO	MO	MO	MO	MO	MO
Feresa attenuata	Pygmy Killer Whale											MO	MO	MO	
Grampus griseus	Risso's Dolphin						MO	MO	MO	MO	MO	MO	MO	MO	MO
Lagenodelphis hosei	Fraser's Dolphin												MO		MO
Lagenorhynchus cruciger	Hourglass Dolphin									MO	MO				
Lagenorhynchus obscurus	Dusky Dolphin		✓				LO	MO	LO	LO	LO	LO			

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Lissodelphiss peronii	Southern Right Whale Dolphin						MO	MO	MO	MO	MO	MO	MO	MO	MO
Orcaella Heinsohni	Australian Snubfin Dolphin	V	✓	✓									KO		
Orcinus orca	Killer Whale		✓				LO	LO	LO	LO	LO	LO	MO	MO	MO
Pseudorca crassidens	False Killer Whale						LO	MO	LO	LO	LO	LO	LO	LO	LO
Sousa sahulensis	Australian Humpback Dolphin	V	✓	✓									BKO		LO
Stenella attenuata	Spotted Dolphin											MO	MO	MO	MO
Stenella coeruleoalba	Striped Dolphin											MO	MO	MO	MO
Stenella longirostris	Long-snouted Spinner Dolphin											MO	MO	MO	MO
Steno bredanensis	Rough-toothed Dolphin											MO	MO	MO	MO
Tursiops aduncus	Indian Ocean Bottlenose Dolphin				*		LO	LO	LO*b			LO*b,f	LO*b		
Tursiops australis sp. nov.[1]	Burrunan Dolphin[1]							KO[1]	KO[1]						MO

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Tursiops truncatus s. str.	Bottlenose Dolphin						MO	MO	MO	MO	MO	MO	MO	MO	MO
Phocoena dioptrica	Spectacled Porpoise		✓							MO	MO				

Threatened Species:

V *Vulnerable*

E *Endangered*

CE *Critically Endangered*

Migratory Species:

M *Marine*

W *Wetland*

T *Terrestrial*

Biologically Important Area

*** *BIA Present*

a *Aggregation*

b *Breeding*

f *Foraging*

Type of Presence:

MO Species of species habitat may occur within area

LO Species or species habitat likely to occur within area

KO Species of species habitat known to occur within area

FLO Foraging, feeding or related behaviour likely to occur within area

FKO Foraging, feeding or related behaviour known to occur within area

BMO Breeding may occur within area

BKO Breeding known to occur within area

Plan Reference:

[1] Recovery Plan for the Australian Sea Lion (*Neophoca cinereal*) (DSEWPaC, 2013b)

[2] Conservation Advice for *Neophoce cinera* (Australian Sea Lion) (TSSC, 2020b)

[3] Approved Conservation Advice for *Mirounga leonine* (Southern Elephant Seal) (TSSC, 2016c)

[4] Sub-Antarctic Fur Seal and Southern Elephant Seal Recovery Plan (DEH, 2003)

[5] Approved Conservation Advice for *Balaenoptera borealis* (Sei Whale) (TSSC, 2015j)

[6] Conservation Management Plan for the Blue Whale, 2015-2025 (DoE, 2015d)

[7] Approved Conservation Advice for *Balaenoptera physalus* (Fin Whale) (TSSC, 2015k)

[8] Conservation Management Plan for the Southern Right Whale, 2011-2021 (DSEWPaC. 2012g)

[9] Approved Conservation Advice for *Megaptera novaeangliae* (Humpback Whale) (TSSC, 2015i)

[10] Listing Advice for *Megaptera novaeangliae* (Humpback Whale) (TSSC, 2022)

Scientific Name	Common Name	Threatened Species	Migratory Species	Listed Marine Species	BIA	Conservation/ Recovery Plans	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
									[11] National Recovery Plan for the Southern Right Whale (DCCEEW, 2024l)						

[1] Burrunan Dolphin is not included in the DEE Species Profile and Threats Database; and has been manually added to this table of results. Distribution of the dolphin has been identified from Charlton-Robb et al. 2011.

Table 3-28: Marine Mammal Threatened Species Management Advice relevant to Petroleum Activities within Applicable Amplitude Energy Operating Areas

Species	Conservation Advice/Recovery Plan	Key Threats relevant to Petroleum Activities	Management Actions relevant to activities within applicable Amplitude operating areas
Pinnipeds			
Australian Sea-lion	Recovery Plan for the Australian Sea Lion (*Neophoca cinereal*) (DSEWPaC, 2013b)	• Marine debris • Pollution and oil spills	• Marine pollution: Evaluate risk of oil spill impact to pinnipeds and, if required, appropriate mitigation measures are implemented. • Marine debris: Evaluate risk of marine debris (including risk of entanglement and/or ingestion) and, if required, appropriate mitigation measures are implemented. • Vessel disturbance: Evaluate risk of vessel strikes and, if required, appropriate mitigation measures are implemented.
Southern Elephant Seal	Approved Conservation Advice for *Mirounga leonine* (Southern Elephant Seal) (TSSC, 2016c)	• Pollution (including marine debris)	• Marine pollution: Evaluate risk of oil spill impact to pinnipeds and, if required, appropriate mitigation measures are implemented.

Species	Conservation Advice/Recovery Plan	Key Threats relevant to Petroleum Activities	Management Actions relevant to activities within applicable Amplitude operating areas
			• Marine debris: Evaluate risk of marine debris (including risk of entanglement and/or ingestion) and, if required, appropriate mitigation measures are implemented.
Whales and other Cetaceans			
Sei Whale	Approved Conservation Advice for *Balaenoptera borealis* (Sei Whale) (TSSC, 2015j)	• Anthropogenic noise and acoustic disturbance • Habitat degradation including pollution • Pollution (persistent toxic pollutants) • Vessel strike	• Vessel disturbance: Evaluate risk of vessel strikes and, if required, appropriate mitigation measures are implemented
Blue Whale	Conservation Management Plan for the Blue Whale, 2015-2025 (DoE, 2015d)	• Noise interference • Habitat modification from marine debris or chemical discharge • Vessel strike	• Noise interference: Evaluate risk of noise impacts to cetaceans and, if required, appropriate mitigation measures are implemented. • Vessel disturbance: Evaluate risk of vessel strikes and, if required, appropriate mitigation measures are implemented.
Fin Whale	Approved Conservation Advice for *Balaenoptera physalus* (Fin Whale) (TSSC, 2015k)	• Anthropogenic noise and acoustic disturbance • Pollution (persistent toxic pollutants) • Vessel strike	• Vessel disturbance: Evaluate risk of vessel strikes and, if required, appropriate mitigation measures are implemented
Southern Right Whale	Conservation Management Plan for the Southern Right Whale, 2011-2021 (DSEWPaC. 2012g) National Recovery Plan for the Southern Right Whale (*Eubalaena australis*) (DCCEEW, 2024l)	• Entanglement • Vessel strike • Noise Interference • Habitat modification • Pollution (acute chemical discharge)	• Noise interference: Assess, manage, and mitigate impacts from anthropogenic noise. • Vessel disturbance: Manage, minimise, and mitigate the threat of vessel strike. • Entanglement: Manage and mitigate the threat of entanglements from commercial active or discarded fishing gear.

Species	Conservation Advice/Recovery Plan	Key Threats relevant to Petroleum Activities	Management Actions relevant to activities within applicable Amplitude operating areas
			• Habitat modification: Address habitat degradation impacts from coastal and offshore marine infrastructure developments.
Humpback Whale (removed from Threatened species list as of 26 February 2022).	Listing Advice for Megaptera novaeangliae (Humpback Whale) in effect from 26 February 2022 (TSSC, 2022).	• Noise interference • Habitat degradation • Entanglement • Vessel disturbance and strike	Current impacts*: • Noise interference: Evaluate risk of noise impacts to cetaceans and, if required, appropriate mitigation measures are implemented • Vessel disturbance: Evaluate risk of vessel strikes and, if required, appropriate mitigation measures are implemented. • Marine debris: Evaluate risk of marine debris (including risk of entanglement and/or ingestion) and, if required, appropriate mitigation measures are implemented. Current impacts* and future threats: • Vessel disturbance: Evaluate risk of vessel strikes and, if required, appropriate mitigation measures are implemented. • **not threatening or preventing population growth (DAWE 2022).*

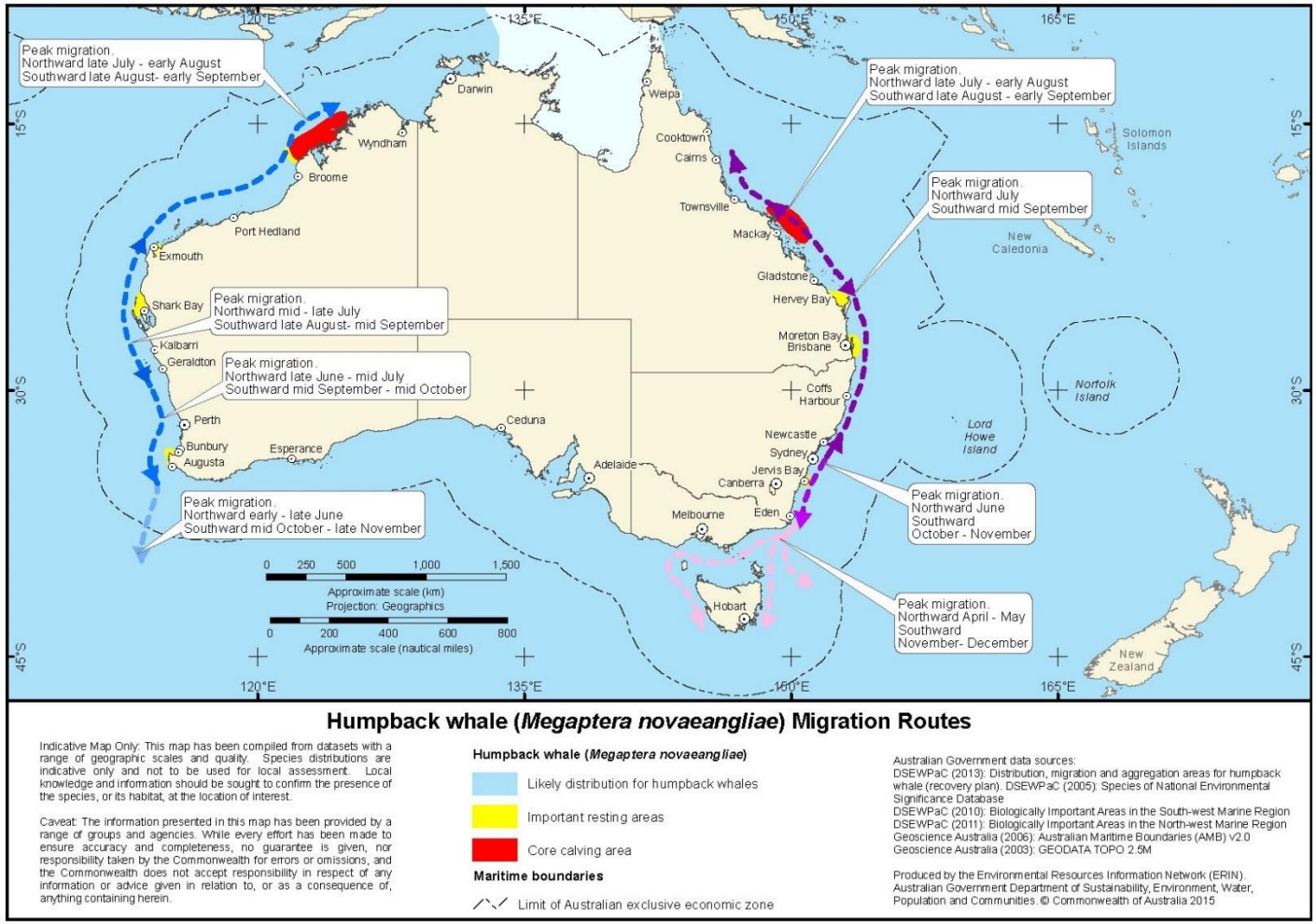


Figure 3-51: Migration Routes for Humpback Whales around Australia (Source: TSSC, 2015i)

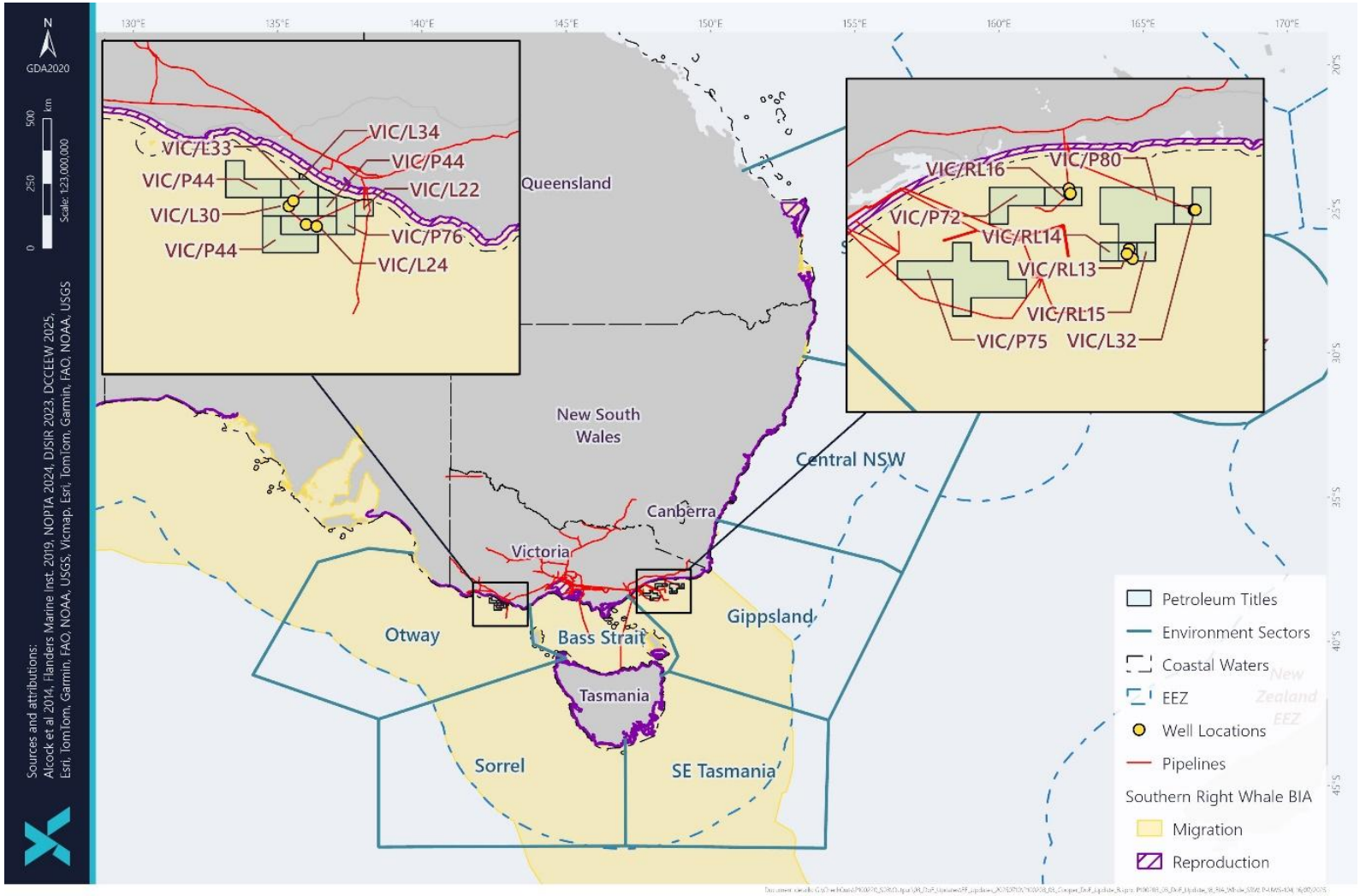


Figure 3-52: BIAs for the Southern Right Whale

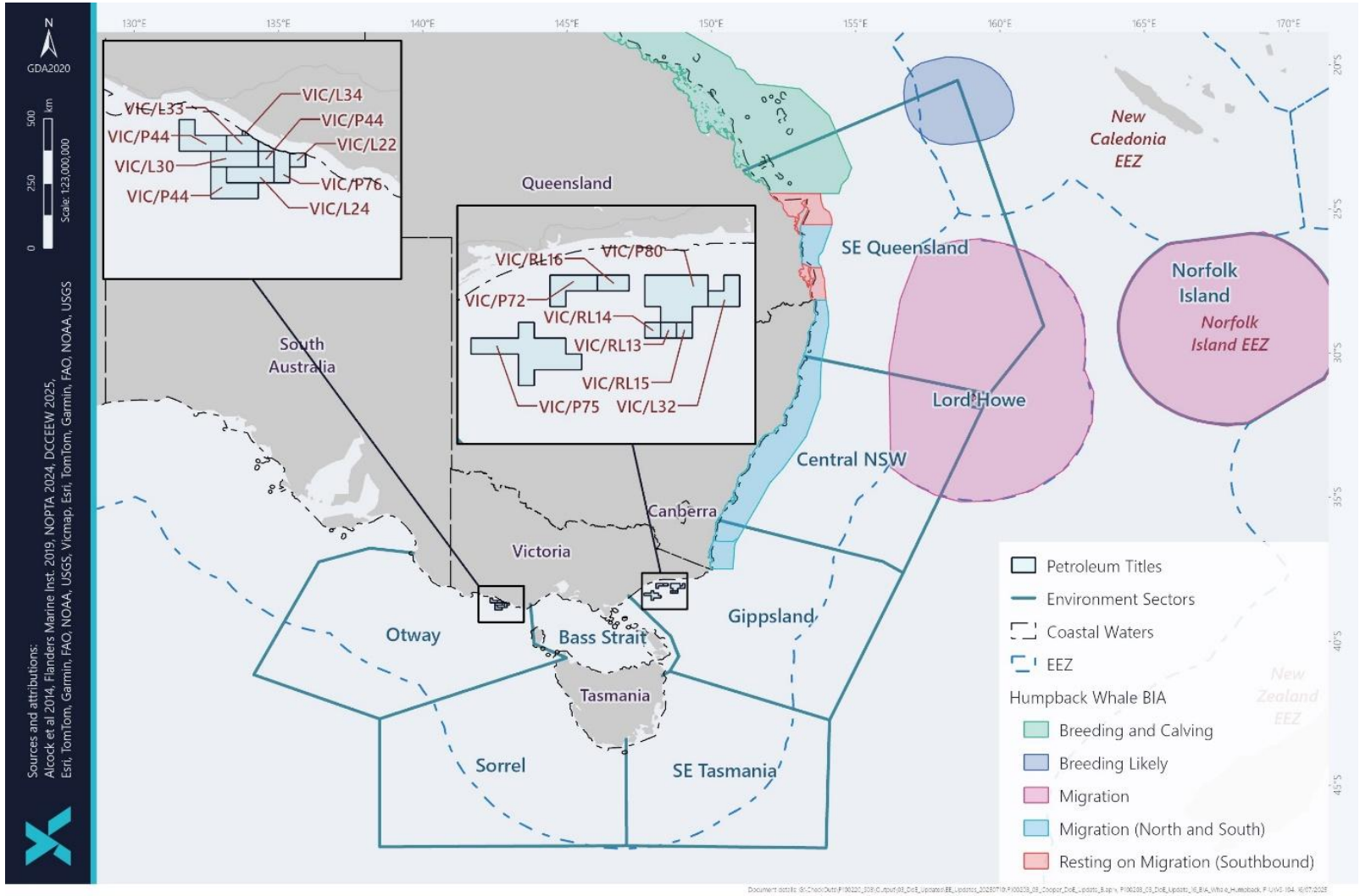


Figure 3-53: BIAs for the Humpback Whale

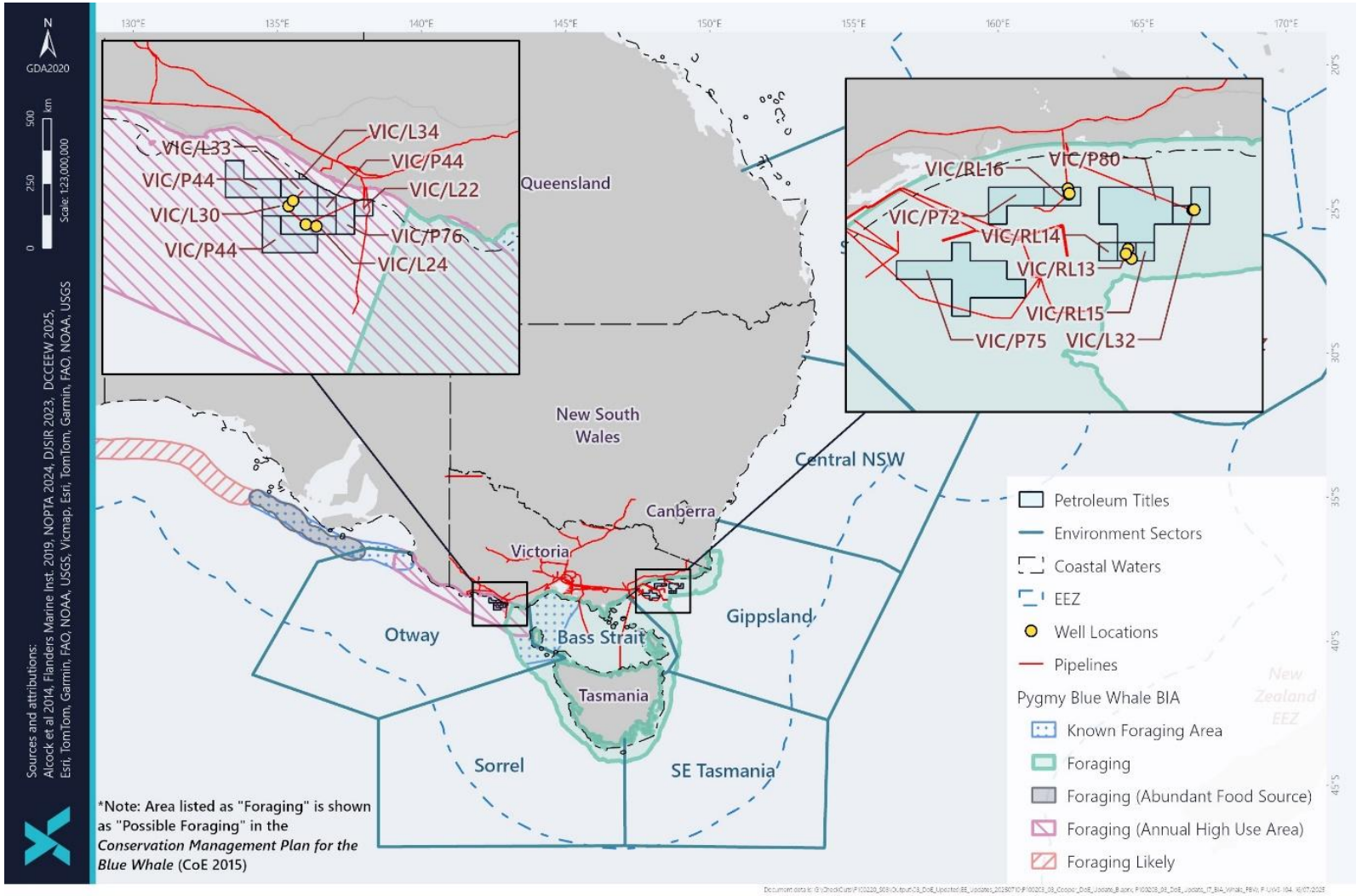


Figure 3-54: BIAs for the Pygmy Blue Whale

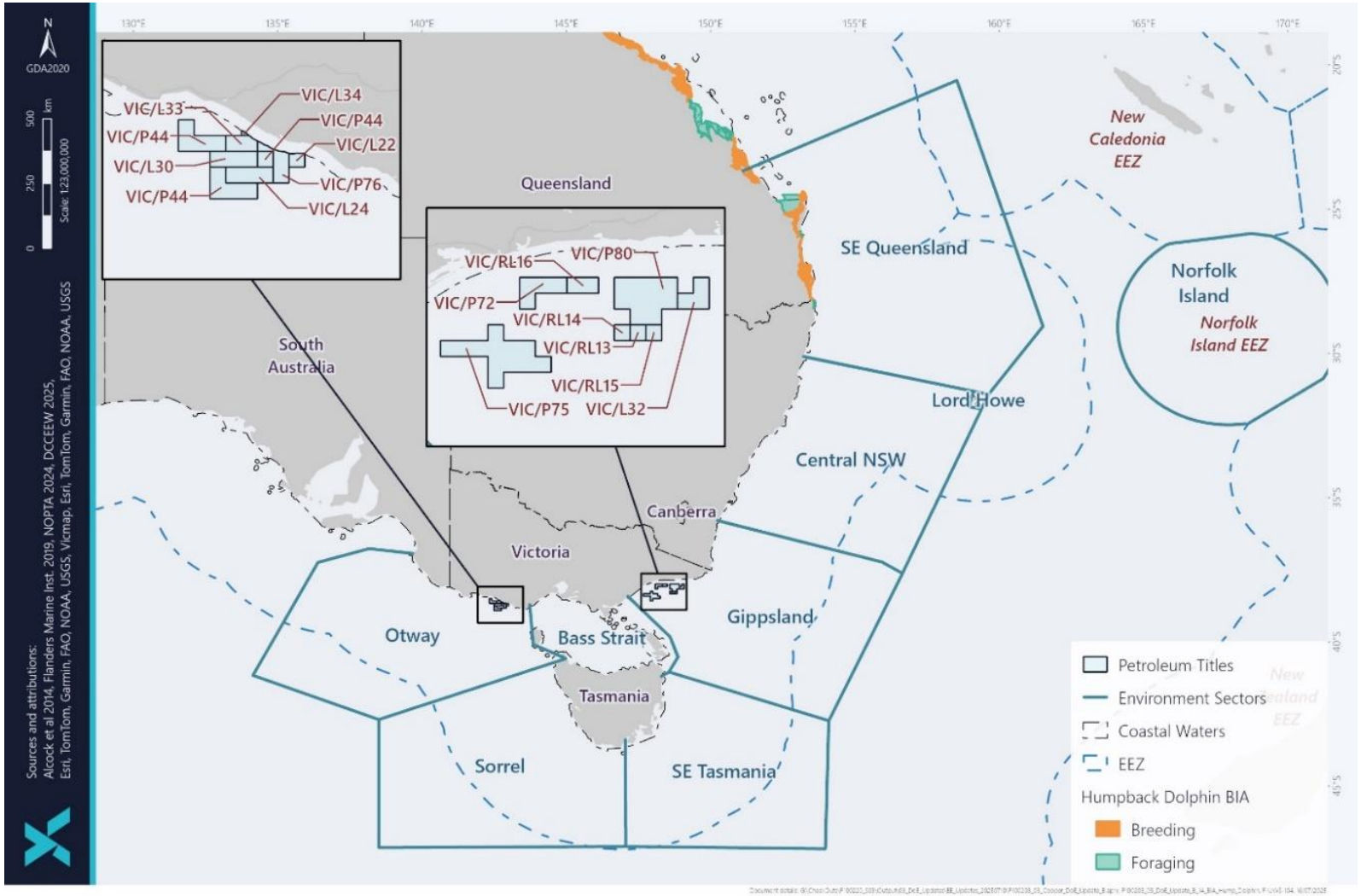


Figure 3-55: BIAs for the Humpback Dolphin

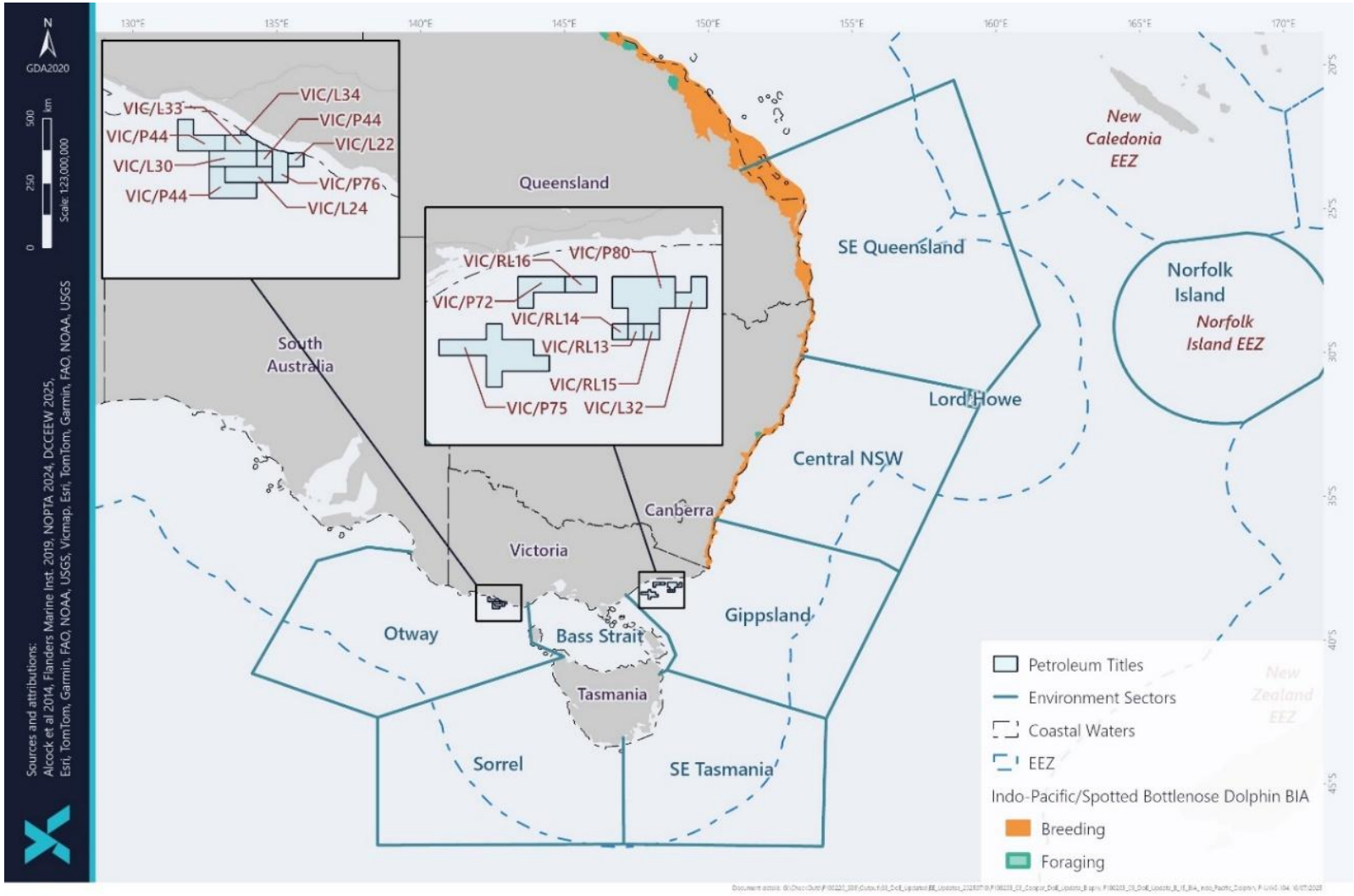


Figure 3-56: BIAs for the Indo-Pacific Humpback Dolphin

3.17 Seasonality of Key Sensitivities

Some species may occur year, round which some may be transient, or have a seasonal occurrence. The arrival of some species to the region is linked to physical processes such as seasonal upwellings in the region and may vary from year to year. This information is used to inform the impact and risk assessment, including the likelihood of a particular consequence eventuating. Table 3-29 identifies when species described above typically occur within the Otway Basin region.

Table 3-29: Seasonality of Key Sensitivities within the Otway Region

Environmental Sensitivity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Marine Mammals (Migratory / Listed)												
Antarctic minke whale			Likely to occur in the austral summer									
Australian sea lion	Assumed present year-round – South-east marine region (SEMR) is a known range											
Australian fur seal (Koorn Moorn)	Present year-round – Islands of the Bass Strait are known colonies Breeding occurs during summer months (October-December)											
Pygmy blue whale		Foraging occurs linked to Bonney Upwelling – BIA										
Bryde's whale	Prefers water depths ranging from 200 m – 1000 m											
Dusky dolphin	Assumed present year-round – prefers inshore habitats but may also be pelagic at times											
Fin whale	Present during the Bonney Upwelling events											
Humpback whale				Nth Migration through SEMR						Sth Migration through SEMR		
Killer whale	Assumed present year-round – frequent sightings off Vic along the continental slope and shelf											
Long-nosed Fur-Seal (NZ Fur Seal)	Assumed present all year-round											

Environmental Sensitivity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pygmy right whale	Uncommon / few or no records available for Vic.											
Sei whale	Sighted during the Bonney Upwelling event											
Southern right whale – migration												
Southern right whale – reproduction				Shoulder							Shoulder	
Sperm whale	Prefer deep offshore environments >600 m											
Marine Reptiles												
Green turtle	Occurs in limited numbers in Vic and SA											
Leatherback turtle	Foraging in the SEMR is known to occur											
Loggerhead turtle	Uncommon in southern Australia											
Fish, Sharks and Rays												
Kooyang (Short finned eel)		Adult eels begin seasonal migration to the Coral Sea.				Larvae and glass eel forms enter Victorian estuaries and upstream migration.						
Australian grayling		Spawning from late Summer to Winter (freshwater)				Assumed present year-round – typically occurs in freshwater but can occur in coastal seas						
Eastern dwarf galaxias	Occurs in freshwater habitats											
Porbeagle	Assumed present year-round											
Shortfin mako shark	Assumed present year-round											
White shark	Assumed present year-round with foraging BIAs identified across the Environmental Sectors											
Yarra pygmy perch	Occurs in freshwater habitats											

Environmental Sensitivity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Blue warehou	Assumed present year-round											
Eastern school shark	Assumed present year-round											
Orange roughy	Assumed present year-round											
Southern dogfish (little gulper shark)	Assumed present year-round											
Seabirds and Shorebirds												
Antipodean albatross	Foraging known to occur all year											
Australasian gannet						Present year-round – foraging and aggregation BIAs				Breeding occurs Oct – May		
Black-browed albatross				Fledglings (Apr – May)		Present – foraging BIA			Breeding within SEMR on Macquarie Is.			
Black-faced cormorant	Assumed present year-round (endemic to southern Australia)											
Buller's albatross	Foraging BIA – however, records indicate the species is mainly present around Tas when in the SEMR (species endemic to NZ)											
Campbell albatross					Present in the non-breeding season – foraging BIA			Breeds on Campbell Island, south of NZ Aug - May				
Common diving petrel		Present year-round – foraging BIA					Breeding occurs Jul-Jan – breeding BIA					
Indian yellow-nosed albatross			Fledgling Mar-Apr			Non-breeding visitor – foraging BIA			Breeding occurs in South Africa – eggs laid in Sep-Oct			
Little penguin			Present year-round – foraging BIA						Breeding Sept – Feb			
Short-tailed shearwater (mutton bird)	Present Sep-May – foraging BIA					Migrates north for Winter				Breeding Oct – May		
Shy albatross	Assumed present year-round – foraging BIA. Breeding occurs in SEMR with eggs laid in Sept and fledglings in Apr											

Environmental Sensitivity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wandering albatross	Assumed present year-round – foraging BIA. Breeding occurs biennially on Macquarie Island with eggs laid in Dec and fledglings between mid-Nov and late-Feb											
Wedge-tailed shearwater	Present Aug-May – foraging BIA											
White-faced storm petrel	Fledglings mid-Feb – mid-Mar Foraging BIA during breeding season			Migrates to tropical and subtropical locations in non-breeding season					Species arrive at breeding colonies late-Sept – early-Oct with egg laying occurring in early Summer. Foraging BIA during breeding season			
Birds – other seabirds (With no BIAs identified)	Various species – assumed present											
Birds – shorebirds	Various species – assumed present											
Conservation												
Bonney Upwelling												
Legend												
	Peak occurrence / activity (reliable and predictable)											
	Low level of occurrence/ activity (may vary from year to year), or otherwise as described above											
	No occurrence											

Table 3-30: Seasonality of Key Sensitivities within the Gippsland Region

Environmental Sensitivity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Marine Mammals												

Environmental Sensitivity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Antarctic minke whale			Likely to occur in the austral summer									
Australian fur seal (Koorn Moorn)	Present year-round – Islands of the Bass Strait are known colonies Breeding occurs during summer months (October-December)											
Blue whale				Distribution – possible foraging (Apr-June)								
Bryde's whale	Prefers water depths ranging from 200 m – 1000 m											
Dusky dolphin	Assumed present year-round – prefers inshore habitats but may also be pelagic at times											
Fin whale	Foraging likely to occur (Dec – May)											
Humpback whale				Nth Migration through SEMR						Sth Migration through SEMR		
Killer whale	Assumed present year-round – frequent sightings off Vic along the continental slope and shelf											
Pygmy right whale	Uncommon / few or no records available for Vic.											
Sei whale	Foraging likely to occur (Dec -May)											
Southern right whale				Migration					Migration			
Sperm whale	Prefer deep offshore environments >600 m											
Marine Reptiles												
Green turtle	Species or species habitat likely to occur											
Leatherback turtle	Species or species habitat likely to occur											
Loggerhead turtle	Species or species habitat likely to occur											
Fish, Sharks and Rays												
Australian grayling		Spawning from late Summer to Winter (freshwater)				Assumed present year-round – typically occurs in freshwater but can occur in coastal seas						

Environmental Sensitivity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Eastern dwarf galaxias	Occurs in freshwater habitats											
Porbeagle	Assumed present year-round											
Shortfin mako shark	Assumed present year-round											
White shark		Distribution (low density)										
Whale shark	Species or species habitat may occur											
Blue warehou	Assumed present year-round											
Eastern school shark	Assumed present year-round											
Orange roughy	Assumed present year-round											
Harrisson's Dogfish, Endeavour Dogfish, Dumb Gulper Shark, Harrison's Deepsea Dogfish	Assumed present year-round											
Seabirds and Shorebirds												
Antipodean albatross	Foraging known to occur all year											
Australian fairy tern	Foraging, feeding or related behaviour likely to occur											
Australasian gannet						Present year-round – foraging and aggregation BIAs				Breeding occurs Oct – May		
Black-browed albatross				Present – foraging BIA								
Black-faced cormorant				Present – foraging BIA								
Blue Petrel							Species may occur					
Buller's albatross	Foraging BIA and species may occur											
Campbell albatross	Foraging BIA and species may occur											

Environmental Sensitivity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chatham albatross	Foraging BIA and species may occur											
Common diving petrel	Present year-round – foraging BIA											
Curlew sandpiper									May occur Sept - Mar			
Eastern curlew	Species or species habitat may occur											
Fairy prion				Species or species habitat may occur								
Gibson's albatross	Species or species habitat likely to occur											
Gould's petrel	Species or species habitat may occur											
Grey-headed albatross	Species may occur											
Indian yellow-nosed albatross			Foraging BIA. birds present Mar - June									
Northen Giant Petrel					Species or species habitat may occur							
Northern royal albatross	Species or species habitat likely to occur											
Red Knot	Species or species habitat likely to occur							Arrive late Aug through to April				
Salvin's Albatross				Species or species habitat likely to occur								
Shy albatross	Foraging BIA, Species or species habitat likely to occur											
Sooty Albatross	Species or species habitat likely to occur											
Southern giant petrel				Species or species habitat may occur								
Southern royal albatross	Species or species habitat likely to occur											
Wandering albatross	Foraging BIA, Species or species habitat likely to occur											
White-bellied storm petrel	Species or species habitat likely to occur											
White-capped albatross	Species or species habitat likely to occur											

Environmental Sensitivity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
White-faced storm petrel	Foraging BIA during breeding season			Migrates to tropical and subtropical locations in non-breeding season					Foraging BIA during breeding season			
Conservation												
Upwelling of East Eden												
Legend												
	Peak occurrence / activity (reliable and predictable)											
	Low level of occurrence/ activity (may vary from year to year), or otherwise as described above											
	No occurrence											

3.18 Marine Pests

Estuarine and marine non-native species are typically introduced and spread through coastal waters by vessel movements and, to a lesser extent, the aquarium trade and aquaculture (Clark and Johnston, 2017). Over 250 introduced marine plants and animals have been recorded in Australian waters (DAFF, 2017). Marine pests are non-native plants or animals which can have a detrimental impact on native marine ecosystems. Not all non-native species become pests, but, when they do, they are classified as invasive. Invasive species often occur in high proportions on artificial substrates (Clark and Johnston, 2017).

The Australian Government National Introduced Marine Pest Information System (NIMPIS) provides information on marine pests in Australian Waters (Table 3-31). Two locations identified on NIMPIS are in the same regions as Amplitude Energy Operational Areas: Portland (Otway Region), and Melbourne (Gippsland Region). Both have multiple IMS established.

See **https://www.marinepests.gov.au/** for further details on the IMS identified in Table 3-31.

Table 3-31: IMS Recorded in Victorian Waters[3]

Scientific name	Common name	Gippsland/Lakes	Corner Inlet/ surrounds	West port	Port Phillips Bay	Apollo Bay	Portland Harbour
Asterias amurensis	Northern Pacific sea star	✓	✓	✓	✓		
Carcinus maenas	European green shore crab	✓	✓	✓	✓		
Codium fragile (subsp. fragile)	Dead man's fingers	✓		✓	✓		✓
Varicorbula gibba	European or basket clam			✓	✓		✓
Magallana gigas	Pacific oyster	✓	✓	✓	✓		
Grateloupia turuturu	Red seaweed				✓		
Maoricolpus roseus	New Zealand screwshell[4]	✓	✓				
Arcuatula senhousia	Asian bag mussel	✓		✓	✓		✓
Sabella spallanzanii	European fan worm			✓	✓		✓
Undaria pinnatifida	Wakame[5]		✓		✓	Y	
Styela Clava	Stalked sea squirt	✓		✓	✓		
Styela plicata	Pleated sea squirt	✓		✓	✓		
Ciona intestinalis	Sea vase tunicate	✓		✓	✓		

[3] Information provided by the DJPR (now DEECA) (pers comms Richard Stafford Bell March 2019); also informed by review of marinepests.gov.au (accessed August 2025).

[4] New Zealand Screw Shell (Maoricolpus roseus) – somewhat widespread in Gippsland. No records of it occurring in Port Philip Bay or elsewhere in Victoria. It remains an IMS for the Melbourne region.

[5] Japanese Kelp (Undaria pinnatifida) – widespread in Port Phillip Bay and recently detected in Port Welshpool (roughly 7km from Barry Beach marine terminal). Reducing the potential spread of this species is a priority.

Scientific name	Common name	Gippsland/Lakes	Corner Inlet/ surrounds	West port	Port Phillips Bay	Apollo Bay	Portland Harbour
Euchone limnicola	Fanworm						✓
Amathia distans	White bushy bryozoan						
Cryptosula pallasiana and Bugula neritina	Bryozoan spp.						
Ascidiella aspersa	Solitary Ascidian						✓
Theora lubrica	East Asian Bivalve						✓
Alexandrium tamarense and Alexandrium minutum	Toxic Dinoflagellate spp.						✓

✓ Present

4.0 Conservation Values and Sensitivities

4.1 World Heritage Properties

World Heritage Places are sites of outstanding universal value, defined by cultural and/or natural criteria. Australia is home to more listed natural World Heritage Sites than any other country and contains a total of 20 World Heritage Places altogether (DCCEEW, 2025e).

There are 11 World Heritage Properties that intersect the Environmental Sectors (DCCEEW, 2025) and are listed in Table 4-1.

There are no World Heritage Properties in the Gippsland region.

There is one declared property in the Otway region (Budj Bim Cultural Landscape), located near Portland, VIC. Budj Bim holds an ancient and complex freshwater aquaculture system developed by Gunditjmara to trap and harvest short-finned eel (Anguilla australis) which migrate to/from oceanic breeding grounds from freshwater habitat (budjbim.com.au, ari.vic.gov.au; also see Section 5.6.1).

Table 4-1: World Heritage Properties within the Environmental Sectors

	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Australian Convict Sites (Coal Mines Historic Site and Buffer Zone)					✓				
Australian Convict Sites (Darlington Probation Station and Buffer Zone)					✓				
Australian Convict Sites (Kingston and Arthurs Vale Historic Area)									✓
Australian Convict Sites (Port Arthur Historic Site and Buffer Zone)					✓				
Budj Bim Cultural Landscape	✓								
Gondwana Rainforests of Australia						✓	✓		
Great Barrier Reef							✓		
K'gari (Fraser Island)							✓		
Lord Howe Island Group						✓		✓	
Sydney Opera House and Buffer Zone						✓			
Tasmanian Wilderness				✓					

4.1.1 Australian Convict Sites

On 31 July 2010 the *Australian Convict Sites* became Australia's 18th World Heritage listed place. The 11 places that make up the *Australian Convict Sites* World Heritage serial listing tell a story of exile from one side of the world to the other and how a new nation was formed from hardship,

inequality and adversity (DCCEEW, 2025f). Together the sites represent the global phenomenon of convictism - the forced migration of convicts to penal colonies in the 18th and 19th centuries - and global developments in the punishment of crime in modern times. The *Australian Convict Sites* are the preeminent examples of our rich convict history, with more than 3000 convict sites remaining around Australia. This is unique in the world today (DCCEEW, 2025f). Four of these sites intersect the Environmental Sectors.

4.1.1.1 Coal Mines Historic Site and Buffer Zone

Located in bushland on the northern promontory of Tasman Peninsula, within Little Norfolk Bay, the Coal Mines Historic Site contains a collection of ruins and landscape modifications that tell the story of a convict establishment and penal colliery that operated from 1833-48 (DCCEEW, 2025f). It is one of several probation stations established on Tasman Peninsula to exploit natural resources and provide for the reform of convicts through hard labour in a secure and isolated landscape. The site is made up of ruined structures and archaeological features from the convict era within 214 hectares of open forest and bushland. It includes the remains of a prison complex, solitary underground isolation cells, hospital, military buildings, wharves, tramways, quarries, garden plots, constable station, semaphore station and cemetery (DCCEEW, 2025f).

Darlington Probation Station located on Maria Island off the east coast of Tasmania, offers a glimpse into our convict past and the probation system that was unique to Tasmania. The 13 intact structures that remain are set amongst a relatively unchanged landscape and uniquely demonstrating the philosophy behind the probation system (DCCEEW, 2025f).

4.1.1.2 Darlington Probation Station and Buffer Zone

Established as a convict station between 1825 and 1832 and operated as a probation station between 1842 and 1850. Its isolated location on Maria Island made it an ideal choice for a probation station. The probation system was a major phase of the control and reform of convicts in Australia (DCCEEW, 2025f). Convicts were classified into three classes, and this determined their treatment and conditions including their labour, sleeping and eating arrangements and privileges. A regime of moral redemption through education and religious instruction was an important feature of the new system. There are 16 convict structures and remains in a bushland setting of over 360 hectares. The landscape has survived largely unchanged since the convict era (DCCEEW, 2025f).

4.1.1.3 Kingston and Arthurs Vale Historic Area

This historic area located on Norfolk Island, is of outstanding significance to the nation as a convict settlement spanning the era of transportation to eastern Australia from 1788 to 1855 (DCCEEW, 2025f).

Norfolk Island was first established as a penal settlement in 1788 for its remote location to deter escapes and resources for ship building and food production. KAVHA later became infamous as a 'hell on earth' with 'no hope of return' (DCCEEW, 2025f). Convicts were subjected to hard labour such as land clearance, farming, logging and construction of roads and buildings. The punishment, living and working conditions were extremely harsh and brutal. Many convicts endured excessive floggings and several major convict rebellions broke out on the island (DCCEEW, 2025f).

The site includes more than 40 buildings, groups of buildings, ruins and archaeological remains within 225 hectares of relatively undisturbed land. All structures were built by convicts from limestone quarried on the island or with local timber (DCCEEW, 2025f).

4.1.1.4 Port Arthur Historic Site – Port Arthur

Established in the 1830s as a penal settlement. It remains a physical chronicle of a dramatic part of Australia's history. Port Arthur is made up of more than 30 buildings, ruins and homes set in 40 hectares of landscaped grounds (DCCEEW, 2025f). Buildings and structures that remain standing or as ruins include the penitentiary, separate prison, commandant's house, hospital, officers row, dockyards, church, hospital and a cemetery on the Isle of the Dead. The site provides valuable and tangible evidence of the physical form of the penal system in Australia as well as an extensive body of documentary sources and archaeological materials. The gardens, grounds and the waterfront provide a picturesque setting for the buildings and ruins of the penal settlement, contrasting to the alien and inhospitable reality of the convict era (DCCEEW, 2025f).

4.1.2 Budj Bim Cultural Landscape

The Budj Bim Cultural Landscape is located in southern-eastern Australia on the Traditional Country of the Gunditjmara people. The landscape has three main areas, Tae Rak (Lake Condah), Tyrendarra, and Kurtonitj. These areas are physically and culturally connected through the Budj Bim lava flows, which form the foundation of the landscape and its aquaculture system. The site includes a network of channels, weirds, dams, ponds, and sinkholes constructed from volcanic rock (UNESCO, 2023).

The Budj Bim Cultural landscape is globally significant for its demonstration of sustained human ingenuity and environmental management. Over at least 6,600 years, the Gunditjmara people developed and maintained a complex aquaculture systems to trap, store, and harvest kooyang (short-finned eel), which provided a stable economic and social base (UNESCO, 2023). The site reflects a deep time cultural narrative, which archaeological evidence reflection more than 32,000 years of occupation. It is recognised under UNESCO World Heritage criteria (iii) and (v) for it cultural traditions and human-environment relationships (UNESCO, 2023).

The landscape is shaped by ancient volcanic activity, with rugged terrain, intact vegetation, and minimal modern development preserving its natural and cultural integrity. The Budj Bim lava flows created a patchwork of wetlands that were deliberately modified by the Gunditjmara people to support their aquaculture systems (UNESCO, 2023). The reinstatement of traditional water flows into Tae Rak through a cultural weir in 2010 has enhanced the visibility and functionality of the aquaculture system. The Budj Bim volcano is central to the landscape's formation, having produced the lava flows that shaped the terrain and provided the raw materials for aquacultural infrastructure (UNESCO, 2023).

The Gunditjmara people used that volcanic rock to construct hydrological systems that manipulated water flow and supported eel migration. The aquaculture system reflects a sophisticated understanding of ecological processes, particularly the life cycle of kooyang. The Gunditjmara people manipulated seasonal water flows to support eel harvesting and enhance other food resources. The wetlands and surrounding ecosystems support a verity of native species and demonstrate ecological succession (UNESCO, 2023). Practices, such as, basket weaving, and stone weir construction are tied to ecological knowledge and continue to be passed down through generations. The landscape exemplified a living cultural system where biodiversity and cultural heritage are intertwined (UNESCO, 2023).

4.1.3 Gondwana Rainforests of Australia

The Gondwana Rainforests of Australia is a serial property comprising the major remaining areas of rainforest in southeast Queensland and northeast New South Wales. It represents outstanding

examples of major stages of the Earth's evolutionary history, ongoing geological and biological processes, and exceptional biological diversity (UNESCO, 2023a). A wide range of plant and animal lineages and communities with ancient origins in Gondwana, many of which are restricted largely or entirely to the Gondwana Rainforests, survive in this collection of reserves. The Gondwana Rainforests also provides the principal habitat for many threatened species of plants and animals (UNESCO, 2023a).

Gondwana is listed for three of the ten World Heritage criteria (UNESCO, 2023a):

- Outstanding examples representing major stages of earth's history
- Outstanding examples representing significant on-going geological and biological processes
- Containing the most important and significant natural habitats for in-situ conservation of biological diversity.

4.1.4 Great Barrier Reef Marine Park

The Great Barrier Reef was World Heritage listed in 1981 on the basis of its outstanding universal value (GBRMPA, 2014). It is the largest coral reef system in the world, stretching over 2,300 km and containing coral reefs, islands and other habitats (e.g. mangroves, seagrass, algal and sponge gardens, open water) (GBRMPA, 2014). These habitats support many threatened or migratory species listed under the EPBC Act (GBRMPA, 2014). The variety of marine species in the area includes 600 types of hard and soft corals, over 100 species of jellyfish, 3,000 varieties of molluscs, 500 species of worms, 1,625 types of fish, 133 varieties of sharks and rays, and more than 30 species of whales and dolphins (GBRMPA, 2017). The Great Barrier Marine Park was declared in sections between 1979 and 2001; and amalgamated in 2003. The Marine Park includes all waters seaward of low water mark (excluding internal waters), and approximately 70 Commonwealth Islands.

The Great Barrier Reef Marine Park extends into the northern part of the 'SE Queensland' Environmental Sector (Figure 4 2). The following management zones are present within the Environmental Sectors (Figure 4 3):

- General Use – IUCN Category VI
- Habitat Protection – IUCN Category VI
- Conservation Park – IUCN Category IV
- Buffer – IUCN Category IV
- Scientific Research – IUCN Category IA
- Marine National Park – IUCN Category II
- Preservation – IUCN Category IA.

One Commonwealth island: Lady Elliot Island (IUCN Category II) is also present within the Environmental Sectors.

Aboriginal and Torres Strait Islander peoples are the Traditional Owners of the Great Barrier Reef area, and they maintain a continuing connection to the Reef and adjacent coastal areas (GBRMPA, 2014). There are approximately 70 Aboriginal and Torres Strait Islander Traditional Owner clan groups whose customary estates include land and sea country within the Great Barrier Reef (GBRMPA, 2014).

4.1.5 K'gari (Fraser Island)

Fraser Island, also known by its Aboriginal name of K'gari, lies along the eastern coast of Australia. The property covers 181,851 hectares and includes all of K'gari and several small islands off the island's west coast. It is the world's largest sand island, offering an outstanding example of ongoing biological, hydrological and geomorphological processes (UNESCO, 2021).

K'gari, the world's largest sand island, boasts exceptional natural beauty with over 250 km of pristine beaches, vividly coloured sand cliffs, and unique rainforest growing on tall sand dunes. It also features half of the world's perched freshwater dune lakes and the largest unconfined aquifer found on a sand island, creating a spectacular and diverse landscape (UNESCO, 2021).

K'gari showcases remarkable geological processes, including longshore drift and the world's most complete sequence of evolving coastal dune systems, with unique parabolic dunes stabilized by towering rainforests. It features an exceptional variety of freshwater dune lakes shaped by the dynamic interaction between sand dunes, aquifer hydrology, and lake formation over time. The island's soil development is globally unique, with podzol profiles reaching over 25 metres deep, influencing plant succession and leading to retrogressive changes in older dune systems (UNESCO, 2021).

K'gari exemplifies remarkable biological processes on a sand medium, including unique rainforest succession and the evolution of rare plant and animal species adapted to low fertility, fire, and waterlogging (UNESCO, 2021). The island's vegetation shows complex zonation and rapid changes in composition, with heathlands and forests serving as refuges for relict populations and supporting ongoing speciation. Notably, the discovery of sub-tropical patterned fens and the presence of tall rainforest trees on coastal dunes highlight the island's unparalleled ecological diversity and evolutionary significance (UNESCO, 2021).

4.1.6 Lord Howe Island Group

The Lord Howe Island Group is located 700km northeast of Sydney and covers an area of 1,463km^2 , the Lord Howe Island Group comprises Lord Howe Island, Admiralty Islands, Mutton Bird Islands, Ball's Pyramid, and associated coral reefs and marine environments. The Lord Howe Island Group was inscribed on the World Heritage List in 1982 (DCCEEW, 2022g).

The justification criteria for its World Heritage listing are its exceptional diversity of spectacular and scenic landscapes within a small area, including sheer mountain slopes, a broad arc of hills enclosing the lagoon and Balls Pyramid rising abruptly from the ocean. It is considered to be an outstanding example of an island system developed from submarine volcanic activity and demonstrates the nearly complete stage in the destruction of a large shield volcano. Having the most southerly coral reef in the world, it demonstrates a rare example of a zone of transition between algal and coral reefs. Many species are at their ecological limits, endemism is high, and unique assemblages of temperate and tropical forms cohabit (DCCEEW, 2022g).

The second criteria for the World Heritage listing is that it is an outstanding example of the development of a characteristic insular biota that has adapted to the island environment through speciation. A significant number of endemic species or subspecies of plants and animals have evolved in a very limited area. The diversity of landscapes and biota and the high number of threatened and endemic species make these islands an outstanding example of independent evolutionary processes (DCCEEW, 2022g). Endemic species occur in the flora and invertebrate fauna; 60% of invertebrate fauna are endemic with discovery of new species still occurring. Of the endemic flora, more is known about the vascular plants of which 113 of the 239 species are endemic. Whilst

less is known about the non-vascular plants, they are also thought to be highly diverse and include endemic species (DECC, 2007). Lord Howe Island Group is within the Lord Howe Marine Park.

4.1.7 Sydney Opera House and Buffer Zone

The Sydney Opera House, inaugurated in 1973, is located at Bennelong Point on the edge of Sydney Harbour in New South Wales, Australia. Positioned at the tip of a peninsula that projected into the harbour, the building is surrounded by water and integrated into the urban and natural setting. It comprises of three groups of interlocking vaulted 'shells' that house two main performance halls and a restaurant, all set upon a platform with surrounding terrace areas (UNESCO, 2023b). The Sydney Opera House is recognized globally as a masterpiece of 20th-century architecture. Designed by Danish architect Jørn Utzon, whose concept was selected in 1957 through an international competition. It is inscribed on the World Heritage List under Criterion (i) for its outstanding universal value as an iconic artistic and architectural achievement. Although primarily a cultural and architectural site, the Opera House's location within a marine environment necessitates careful environmental management (UNESCO, 2023b). Conservation efforts ensure that the building's presence does not negatively impact the surrounding harbour ecosystem (UNESCO, 2023b).

4.1.8 Tasmanian Wilderness

The Tasmanian Wilderness is one of the largest temperate wilderness areas in the world encompassing more than 1,580,000 hectares and covering almost a quarter of the island state of Tasmania (DCCEEW, 2023m). The place is a stronghold for several animals that are either extinct or threatened on mainland Australia and is recognised as an International Centre for Plant Diversity by the IUCN. Additionally, it is an important cultural landscape for Tasmanian Aboriginal people, who have lived there for at least 35,000 years (DCCEEW, 2023u).

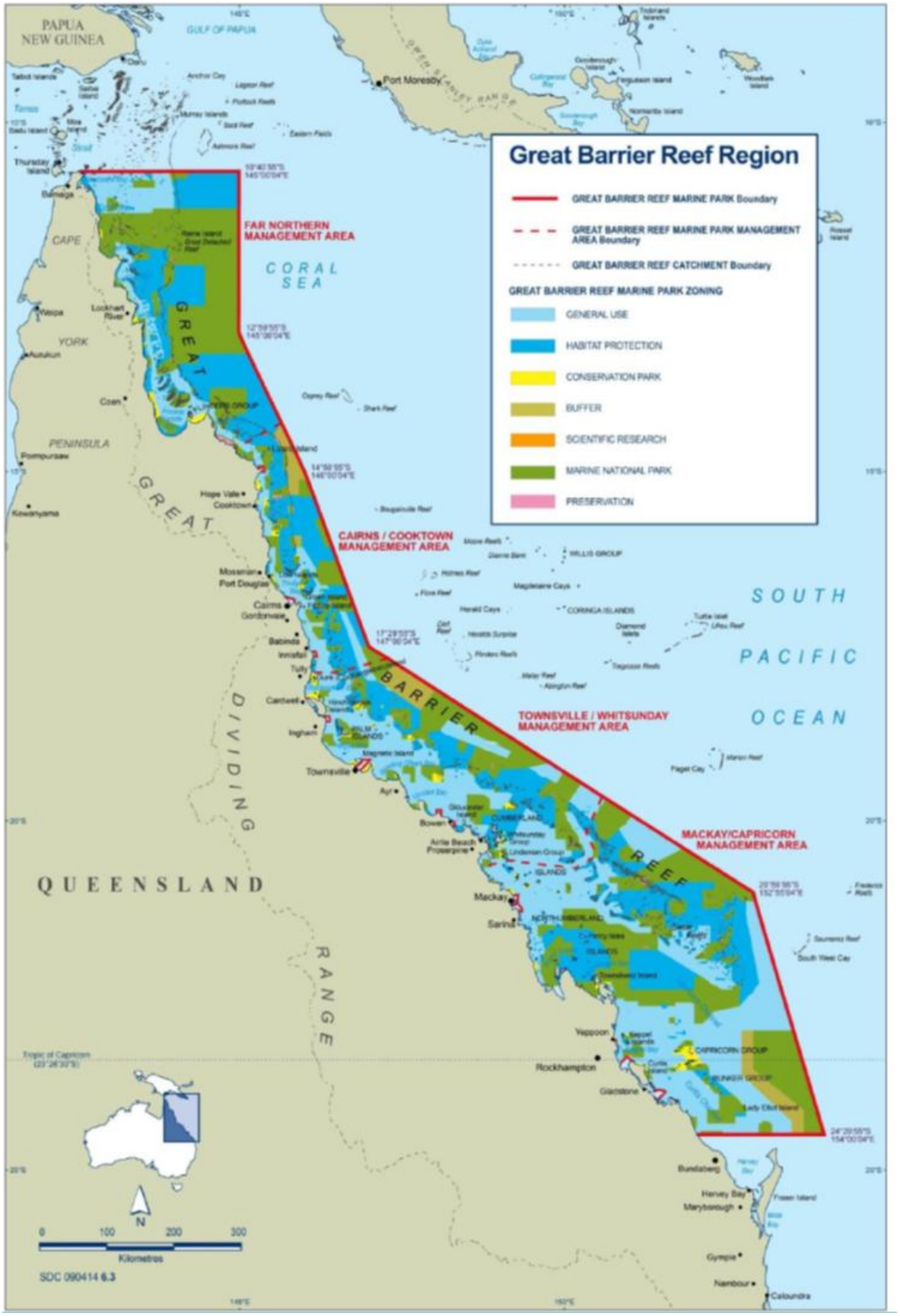


Figure 4-1: Great Barrier Reef Zoning Plan (Source: GBRMPA, 2014)

4.2 National Heritage Places

Listed National Heritage Places within the Environmental Sectors are mostly onshore / coastal sites. Table 5-9 lists all coastal interfacing Heritage Places identified within the Environmental Sectors. The Great Ocean Road and Scenic Environs is the only coastal interfacing National Heritage Place that intersects the Otway Environmental Sector. No National Heritage Places with coastal interface intersect the Gippsland Environmental Sector.

4.3 Commonwealth Protected Areas

Six marine regions have been identified in Commonwealth waters around Australia (Figure 4-2). Three of these regions (South-east, Temperate East and Coral Sea), as well as the Great Barrier Reef Marine Park, intersect with the Environmental Sectors. Key conservation values for each of the marine regions are listed in Table 4-2.

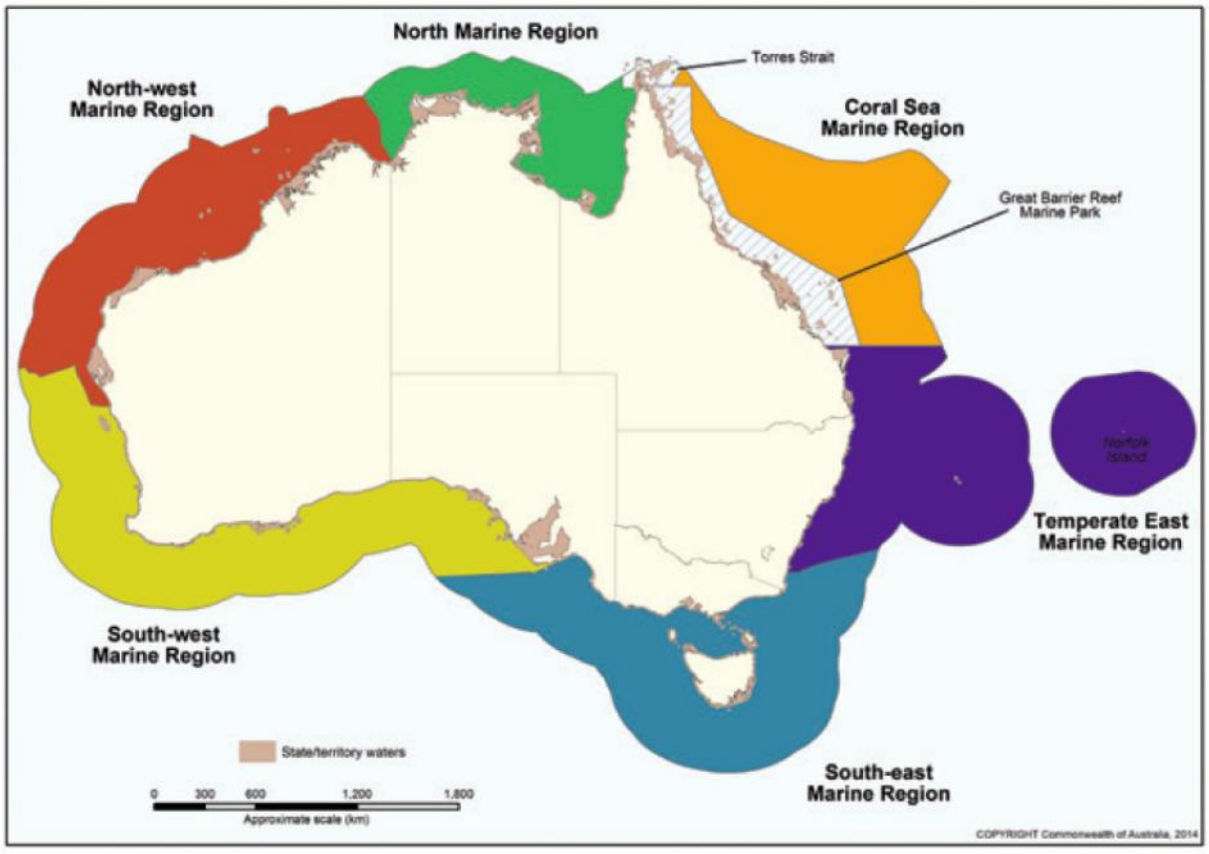


Figure 4-2: Australia's Commonwealth Marine Regions (Source: DoE, 2015a)

Table 4-2: Key Conservation Values for the South-east, Temperate East and Coral Sea Marine Regions

Region	Key Conservation Values
South East Marine Region (SEMR) (DNP, 2013)	• Features with high biodiversity and productivity, such as the east Tasmania subtropical convergence zone, Bass Cascade, Upwelling east of Eden, Seamounts south and east of Tasmania, Bonney coast upwelling. • Breeding and resting areas for Southern Right Whale. • Migration areas for Blue, Fin, Sei, Southern Right and Humpback whales.

Region	Key Conservation Values
	• Foraging areas for Australian Sea-lion, White Shark, Harrison's dogfish, Killer and Sei whales, Australasian Gannet, Fairy Prion, Black-faced Cormorant, Little Penguin, Crested Tern, and several species of seal, penguin, albatross, petrel, shearwater and gulls. • Wrecks of MV City of Rayville, SS Cambridge and ketch Eliza Davies. • 10 provincial bioregions and 17 seafloor types are represented in the network.
Temperate East Marine Region (TEMR) (DNP, 2018a)	• Important habitat for the critically endangered Grey Nurse Shark (east coast population). • Important offshore reef habitat at Elizabeth and Middleton Reefs, Lord Howe Island and Norfolk Island that support the threatened black cod. • Significant seamount ridges that run parallel to the coast and support hundreds of species, including some previously unknown to science. The seamounts rise from seafloor depths of approximately 4800 metres to up to 130 metres from the surface—more than twice the height of Mt Kosciuszko—and are home to deepwater shark species that are only found in Australia. • The Temperate East network provides additional protection to a number of species listed as endangered or vulnerable under Commonwealth legislation or international agreements, including the White Shark, Bleekers devil fish, the Little Tern and other seabirds. • Unique subtropical corals considered the southernmost coral reefs in the world. • Seven Key Ecological Features including shelf rocky reefs, Tasmantid and Lord Howe seamount chains, Elizabeth and Middleton Reefs, Norfolk Ridge, Canyons on the eastern continental slope, and the Tasman Front. • Seven provincial bioregions, three meso-scale bioregions, 73 depth ranges within provincial bioregions, and 15 seafloor types are represented in the network.
Coral Sea Marine Region (CSMR) (DNP, 2018b)	• Habitat and important areas for a range of species have been identified in the region, including for: – Humpback whales during their annual migration along the east coast of Australia. – Nesting and inter-nesting sites for Green Turtles. – Breeding and foraging areas for multiple seabird species including noddies, terns, boobies, frigatebirds, and tropic birds. – White Shark distribution and Whale Shark aggregation. • Transient populations of highly migratory pelagic species, including small fish schools, billfish, tuna and sharks. • The East Australian Current forms in the region and is considered a major pathway for mobile predators such as billfish and tunas. Black marlin undergoes seasonal movements into the Queensland Plateau area. • Includes three Key Ecological Features: the reefs, cays and herbivorous fish of the Queensland Plateau and the Marion Plateau, and the northern extent of the Tasmantid seamount chain. • Heritage values include several historic shipwrecks including three World War II shipwrecks from the Battle of the Coral Sea. • The reserve represents the full range of seafloor features found in the region, including numerous reefs ranging from Ashmore and Boot Reefs in the north of the region to Cato Island and surrounding reefs in the south. The reserve includes canyons, troughs and plateaux, including Bligh Canyon

Region	Key Conservation Values
	approximately 200 kilometres off the coast from Lockhart River and the Townsville Trough, which separates the Queensland and Marion Plateaux. The reserve extends into the deeper waters of the Coral Sea Basin in the north and provides protection for the pinnacles of the northern extent of the Tasmantid seamount chain. • Six provincial bioregions, 94 depth ranges, and 16 seafloor types are represented.

4.3.1 Australian Marine Parks

Australian Marine Parks (AMPs) are located in Commonwealth waters that start at the outer edge of State and Territory waters, generally 3 nm from the shore, and extend to the outer boundary of Australia's EEZ, located 200 m, from the shore. PMST reports show that 22 AMPs (Table 4-3) intersect the Environmental Sectors which span across the South-east Marine Region, the Temperate East Marine Region, and Coral Sea Marine Region (Figure 4-3).

Within each region is a series of Australian Marine Parks (AMP) which are managed for the primary purpose of conserving the biodiversity found in them, while also allowing for sustainable use of natural resources. Under the EPBC Act, once a marine park has been proclaimed, a management plan must be developed by the Director of National Parks. The management plans describe the activities allowed within the park and must be consistent with the relevant Australian IUCN Reserve Management Principles. Management plans are in place for each marine region.

AMPs which intersect with the Environmental Sectors and shown in Figure 4-3 and described in Table 4-3.

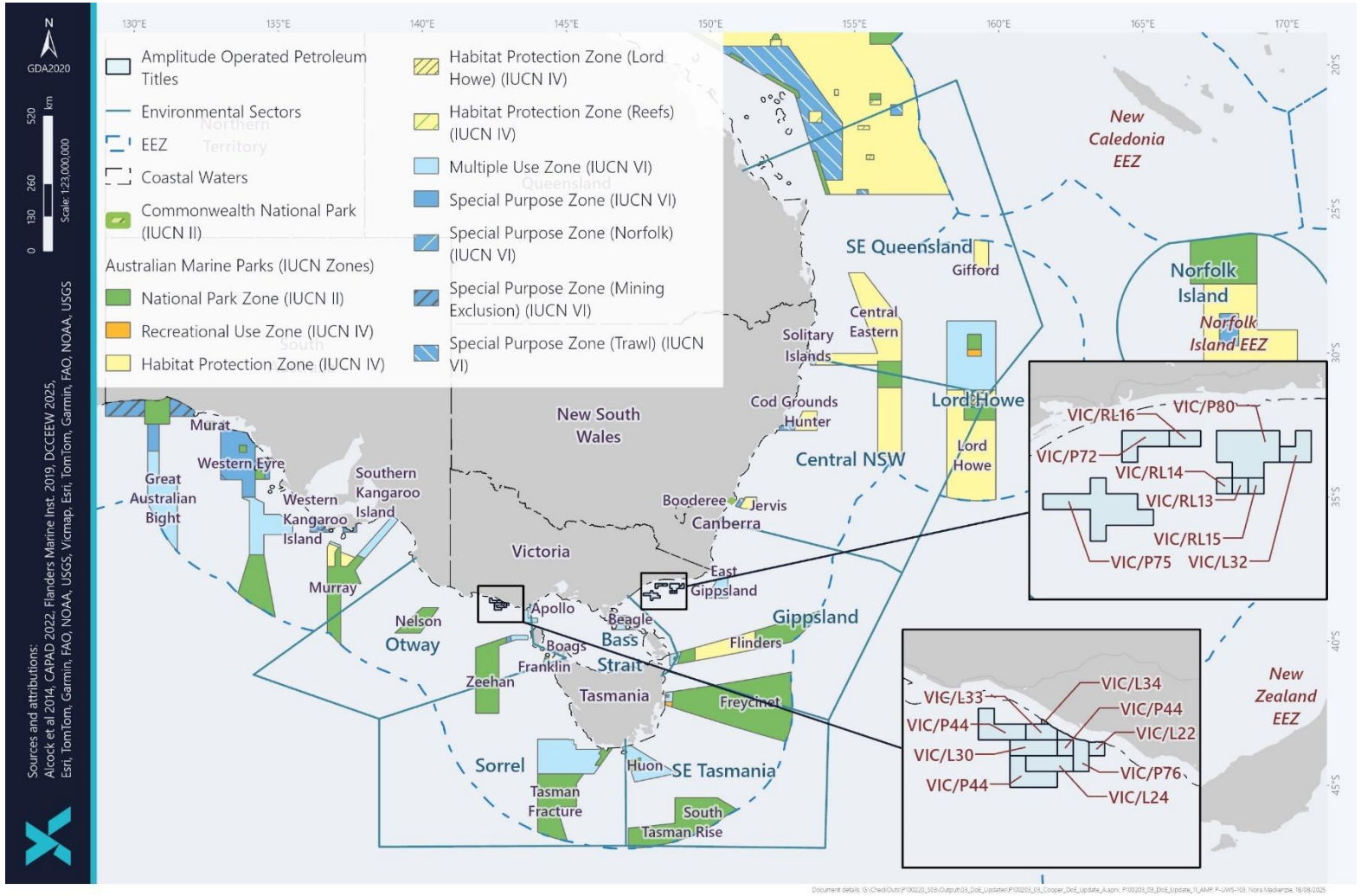


Figure 4-3: Commonwealth Protected Areas Present within the Environmental Sectors

Table 4-3: Australian Marine Parks within the Environmental Sectors

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Apollo	Multiple Use Zone - IUCN Category VI	• Ecosystems, habitats and communities associated with the Western Bass Strait Shelf Transition and the Bass Strait Shelf Province and associated with the sea-floor features: deep/hole/valley and shelf. • Important migration area for: Blue, Fin, Sei and humpback whales. • Important foraging area for: Black-browed and Shy albatross, Australasian Gannet, Short-tailed Shearwater, and Crested tern. • Cultural and heritage site: wreck of the MV City of Rayville.	✓	✓							
Beagle	Multiple Use Zone - IUCN Category VI	• Ecosystems, habitats and communities associated with the Southeast Shelf Transition and associated with the sea-floor features: basin, plateau, shelf and sill. • Important migration and resting on migration area for: southern right whale. • Important foraging area for: Australian fur seal, killer whale, white shark, shy albatross, Australasian gannet, short-tailed shearwater, pacific and silver gulls, crested tern, common diving petrel, fairy prion, black-faced cormorant and little penguin. • Cultural and heritage sites: the wreck of the steamship SS Cambridge and the wreck of the ketch Eliza Davies.		✓							
Boags	Multiple Use Zone - IUCN Category VI	• Ecosystems, habitats and communities associated with the Bass Strait Shelf Province and associated with the sea-floor features: plateau and tidal sandwave/sandbank. • Important foraging area for: shy albatross, Australasian gannet, short-tailed shearwater, fairy prion, black-faced cormorant, common diving petrel and little penguin.		✓							

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Central Eastern	Marine National Park - IUCN Category II Habitat Protection Zone - IUCN Category IV Multiple Use Zone - IUCN Category VI	• Biologically important areas for the protected humpback whale, vulnerable white shark and a number of migratory seabirds. • Examples of the ecosystems of the Central Eastern Province, Central Eastern Shelf Transition, and Tasman Basin Province provincial bioregions and the Tweed-Moreton meso-scale bioregion. • Represents seafloor features including abyssal-plain/deep ocean floor, canyon, pinnacle, slope, knoll/abyssal-hills/hills/mountains/peak, and seamount/guyot. • Includes two key ecological features: • Canyons on the eastern continental slope (part of one of three shelf-incising canyons occurring in the region is represented) interact with currents and ocean gyres resulting in upwellings that influence biological productivity. • Upwellings attract aggregations of tune, whales, albatrosses and support over 50 fish species endemic to the area. • Tasmantid seamount chain (known breeding and feeding areas for a number of open ocean species such as billfish and marine mammals).						✓	✓		
Cod Grounds	Marine National Park Zone - IUCN Category II	• Established in May 2007 in Commonwealth waters just south of Port Macquarie in NSW, to protect a significant aggregation site for the critically endangered east coast population of grey nurse sharks. • Biologically important areas for the protected humpback whale, vulnerable white shark and a number of migratory seabirds. • Examples of the ecosystems of the Central Eastern Shelf Transition provincial bioregion and the Manning Shelf meso-scale bioregion. • The area is a series of underwater pinnacles, which is a significant						✓			

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
		aggregation site for the critically endangered east coast population of grey nurse sharks. • Representation of the shelf seafloor feature.									
Coral Sea	Marine National Park Zone - IUCN Category II Habitat Protection Zone - IUCN Category IV Habitat Protection Zone (Reefs) – IUCN Category IV Special Purpose Zone (Trawl) – IUCN Category VI	• Habitat and important areas for a range of species have been identified in the region, including for: – Humpback whales during their annual migration along the east coast of Australia. – Nesting and inter-nesting sites for green turtles. – Breeding and foraging areas for multiple seabird species including noddies, terns, boobies, frigatebirds, and tropic birds. – White shark distribution and whale shark aggregation. • Transient populations of highly migratory pelagic species, including small fish schools, billfish, tuna and sharks. • The East Australian Current forms in the region and is considered a major pathway for mobile predators such as billfish and tunas. Black marlin undergo seasonal movements into the Queensland Plateau area. • South Equatorial Current, Hiri Current and East Australian current form a barrier to reduce mixing of species between the north and south, forming distinct ecological communities. • Includes three Key Ecological Features: the reefs, cays and herbivorous fish of the Queensland Plateau and the Marion Plateau and the northern extent of the Tasmantid seamount chain. • Heritage values include several historic shipwrecks including three World War II shipwrecks from the Battle of the Coral Sea.							✓		

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
		• The park represents the full range of seafloor features found in the region, including numerous reefs ranging from Ashmore and Boot Reefs in the north of the region to Cato Island and surrounding reefs in the south. The park includes canyons, troughs and plateaux, including Bligh Canyon approximately 200 kilometres off the coast from Lockhart River and the Townsville Trough, which separates the Queensland and Marion Plateaux. The reserve extends into the deeper waters of the Coral Sea Basin in the north and provides protection for the pinnacles of the northern extent of the Tasmantid seamount chain. • Six provincial bioregions, 94 depth ranges, and 16 seafloor types are represented in the park.									
East Gippsland	Multiple Use Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the Southeast Transition and associated with the sea-floor features: abyssal plain/deep ocean floor, canyon, escarpment and knoll/abyssal hillslope. • Features with high biodiversity and productivity: Bass Cascade; upwelling east of Eden. • Important foraging area for: wandering, black-browed, yellow-nosed and shy albatrosses; great-winged petrel; wedge-tailed shearwater; and cape petrel. • Important migration area for: humpback whale.			✓						
Flinders	Marine National Park Zone - IUCN Category II Multiple Use Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the Tasmania Province, the Tasmanian Shelf Province, the Southeast Transition and the Southeast Shelf Transition and associated with the sea-floor features: abyssal plain/deep ocean floor, canyon, plateau, seamount/guyot, shelf and slope.		✓	✓						

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
		• Features with high biodiversity and productivity: east Tasmania subtropical convergence zone. • Important foraging area for: wandering, black-browed, yellow-nosed and shy albatrosses, northern giant petrel, Gould's petrel and cape petrel, killer whale, white shark and Harrison's dogfish. • Important migration area for: humpback whale.									
Franklin	Multiple Use Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the Tasmanian Shelf Province and the Western Bass Strait Shelf Transition and associated with the sea-floor features: shelf, deep/hole/valley, escarpment and plateau. • Important foraging area for: shy albatross, short-tailed shearwater, Australasian gannet, fairy prion, little penguin, common diving petrel, black-faced cormorant and silver gull.	✓			✓					
Freycinet	Marine National Park Zone - IUCN Category II Recreational Use Zone - IUCN Category IV Multiple Use Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the Tasmania Province, the Tasmanian Shelf Province and the Southeast Transition and associated with the sea-floor features: abyssal plain/deep ocean floor, canyon, escarpment, knoll/abyssal hill, saddle, seamount/guyot, shelf and terrace. • Features with high biodiversity and productivity: east Tasmania subtropical convergence zone. • Important foraging area for: wandering, black-browed and shy albatross, cape petrel and fairy prion, sei whales and killer whales. • Important migration and resting on migration area for: southern right whale. • Important migration area for: humpback whale.			✓		✓				

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Gifford	Habitat Protection Zone - IUCN Category IV	• Biologically important areas for protected humpback whales and a number of migratory seabirds. • Examples of the ecosystems of the Lord Howe Province. • Represents seafloor features including basin, plateau and seamount/guyot (Gifford Tablemount).							✓		
Hunter	Multiple Use Zone - IUCN Category VI Special Purpose Zone (Trawl) - IUCN Category VI	• Important habitat for the critically endangered east coast population of grey nurse sharks. • Biologically important areas for the protected humpback whale, vulnerable white sharks and a number of migratory seabirds. • Examples of the ecosystems of the Central Eastern Province and the Central Eastern Shelf Province provincial bioregions and the Manning Shelf meso-scale bioregion • A range of seafloor features including abyssal-plain/deep ocean floor, canyons, shelf, slope, and terrace geomorphic features • Includes one key ecological feature: • Shelf rocky reefs (unique sea-floor feature with ecological properties of regional significance)						✓			
Huon	Habitat Protection Zone - IUCN Category IV Multiple Use Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the Tasmanian Shelf Province and the Tasmania Province and associated with the sea-floor features: canyon, knoll/abyssal hill (seamount), pinnacle, saddle, shelf and terrace • Features with high biodiversity and productivity: seamounts south and east of Tasmania • Important foraging area for: black-browed, Buller's and shy albatrosses, great-winged petrel, short-tailed shearwater, fairy prion, Australian fur seal and killer whale • Important migration area for: humpback whale.				✓	✓				

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Jervis	Multiple Use Zone - IUCN Category VI Special Purpose Zone (Trawl) - IUCN Category VI	• Biologically important areas for protected humpback whales, grey nurse sharks and a number of migratory seabirds • Some canyons incise the mid-slope at depths of 1500-3500 metres, and some extend to a depth of 5000 metres • Seafloor features represented in the park include abyssal-plain/deep ocean floor, canyons, shelf, and slope • Examples of the ecosystems of the Central Eastern Province, the Southeast Shelf Transition and the Batemans Shelf meso-scale bioregion • Includes two key ecological features: – one of three shelf-incising canyons occurring in the region (unique sea-floor feature with ecological properties of regional significance) • shelf rocky reefs (unique sea-floor feature with ecological properties of regional significance						✓			
Lord Howe	Marine National Park Zone - IUCN Category II Recreational Use Zone - IUCN Category IV Habitat Protection Zone (Lord Howe) - IUCN Category IV Habitat Protection Zone - IUCN Category IV Multiple Use Zone - IUCN Category VI	• Biologically important areas for protected humpback whales and a number of migratory seabirds • A major seabird breeding area, with 14 species found on the islands including masked boobys, grey ternlets, red-tailed tropic birds, black-winged petrels and Kermadec petrels • Key location for the black cod and the Galapagos shark • Due to the convergence of warmer tropical and cooler temperate waters in the area of the park, many species found there are at the northern or southern extent of their range • Examples of the ecosystems of the Lord Howe Province and the Tasman Basin Province provincial bioregions • Represents seafloor features including: basin, plateau, saddle, seamount/guyot and deep ocean valley • Includes three key ecological features:						✓	✓	✓	

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
		– the Lord Howe seamount chain (high productivity; aggregations of marine life; biodiversity and endemism). – Elizabeth and Middleton reefs (aggregations of marine life; biodiversity and endemism). • Tasman Front and eddy field (high productivity; aggregations of marine life; biodiversity and endemism)									
Murray	Marine National Park Zone - IUCN Category II Special Purpose Zone - IUCN Category VI Multiple Use Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the Spencer Gulf Shelf Province, the Southern Province and the West Tasmanian Transition and associated with the sea-floor features: abyssal plain/deep ocean floor, canyon, escarpment, knoll/abyssal hill, shelf, slope and terrace • Features with high biodiversity and productivity: Bonney coast upwelling, shelf rocky reefs and hard substrate • Important foraging areas for: blue, sei and fin whales, Australian sea lion, wandering, black-browed, yellow-nosed and shy albatrosses, great-winged petrels, flesh-footed and short-tailed shearwaters, and white-faced storm petrel. • Important breeding area for: southern right whale. • Important migration area for: humpback whale.	✓								
Nelson	Special Purpose Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the West Tasmanian Transition and associated with the sea-floor features: abyssal plain/deep ocean floor, canyon, knoll/abyssal hill, plateau and slope. • Important migration area for: humpback whale, blue, fin and sei whales (likely migration).	✓								
Norfolk Marine Park	Marine National Park	• Significant because it contains habitats, species and ecological communities									✓

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Zone - IUCN Category II Habitat Protection Zone - IUCN Category IV Special Purpose Zone (Norfolk) - IUCN Category VI	associated with the Norfolk Island Province. • Breeding and foraging habitat for seabirds. • Migratory pathway for humpback whales. • Includes two key ecological features: – the Norfolk Ridge (support relatively productive and diverse benthic habitats and are thought to act as steppingstones for faunal dispersal, connecting deep-water fauna from New Caledonia to New Zealand). • Tasman Front and Eddy Field (increased nutrients and plankton aggregations, and enhanced productivity that attracts mobile species such as turtles, cetaceans, tuna and billfish.)									
Solitary Islands	Marine National Park Zone - IUCN Category II Multiple Use Zone - IUCN Category VI Special Purpose Zone (Trawl) - IUCN Category VI	• Important habitat for the critically endangered east coast population of vulnerable grey nurse sharks. • Biologically important areas for the protected humpback whale, vulnerable white shark, number of migratory seabirds and the Indo-Pacific (spotted) dolphin. • Many species found are at, or close to, their southern or northern geographical limits. • Examples of the ecosystems of the Central Eastern Shelf Transition and the Tweed-Moreton meso-scale bioregion. • Representation of the shelf seafloor feature.						✓	✓		
South Tasman Rise	Special Purpose Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the Tasmanian Province and associated with the sea-floor features: abyssal plain/deep ocean floor, canyon, plateau, seamount/guyot and slope. • Important foraging areas for: wandering and black-browed albatross,					✓				

Marine Park	Zoning	Major Conservation Values (DNP, 2013; DNP, 2018a; DNP, 2018b)	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
		short-tailed shearwater, white-headed and white-chinned petrels.									
Tasman Fracture	Marine National Park Zone - IUCN Category II Special Purpose Zone - IUCN Category VI Multiple Use Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the Tasmania Province, the Tasmanian Shelf Province and the West Tasmania Transition and associated with the sea-floor features: abyssal plain/deep ocean floor, basin, canyon, knoll/abyssal hill, pinnacle, plateau, ridge, saddle, shelf, slope, terrace and trench/trough. • Important migration area for: humpback whale. • Important foraging areas for: white shark, New Zealand fur seal, wandering, black-browed and shy albatross, white-chinned petrel, common diving petrel, short-tailed shearwater and fairy prion.				✓					
Zeehan	Special Purpose Zone - IUCN Category VI Multiple Use Zone - IUCN Category VI	• Examples of ecosystems, habitats and communities associated with the Tasmania Province, the West Tasmania Transition and the Western Bass Strait Shelf Transition and associated with the sea-floor features: abyssal plain/deep ocean floor, canyon, deep/hole/valley, knoll/abyssal hill, shelf and slope. • Important migration area for: blue and humpback whales. • Important foraging areas for: black-browed, wandering and shy albatrosses, and great-winged and cape petrels.	✓	✓		✓					

4.3.2 Commonwealth Terrestrial Reserves

The Booderee National park is the only Commonwealth National Park located within the Environmental Sectors (Figure 4-3; Figure 4-4). Located within the Central NSW Environmental Sector, the Booderee National Park was established in 1992 and is jointly managed by Parks Australia and Wreck Bay Aboriginal Community Council (DNP, 2015). The Park stretches across 6,379 ha at Jervis Bay, and includes 875 ha of marine environment, and 80 ha of Botanic Garden (Australia's only Aboriginal-owned and managed Botanic Gardens). Booderee National Park is considered both

nationally and regional significant for its natural and cultural values; and the Park contains many species that are at the limits of their bio-geographical range (DEE, 2017w).

The marine environment of Booderee National Park is characterised by a wide range of tidal and subtidal habitats including shallow rock reefs and sand zones, seagrass meadows, deeper silty sand flats and deep-water rocky reefs, cliffs, platforms, blocks, boulders and caves (DEE, 2017w). The intertidal rock platforms of Bowen Island host a variety of intertidal species including large numbers and varieties of sea urchins, crabs, abalone, and oysters (DEE, 2017w). Bowen Island also supports a colony of Little Penguin, and breeding colonies of three species of shearwater; making it of high conservation significance. The Park area also includes the largest seagrass meadows in New South Wales; Posidionia species are dominant, but Zostera and Halophila sp. are also present. These areas provide habitat for a diversity and abundance of fish and macroinvertebrates. Subtidal and intertidal platforms support a diversity of rocky reef algae with Hormosira, Ecklonia, Sargassum, Phyllospora and Cystophora being the dominant genera. The littoral communities of the National Park are of both local and state-wide significance and include: mangrove communities along Sussex Inlet and south of Whiting Beach; saltmarsh communities at Flat Rock Creek and on the southern section of Bowen Island; and intertidal rocky platforms (DEE, 2017w). The mangrove communities provide habitat for a number of intertidal estuarine organisms, fish and terrestrial species. Saltmarsh communities are of high conservation value as bird feeding areas. The area also supports a population of bottlenose dolphins (DEE, 2017w). The Park protects coastal dune systems and their associated habitats, which are otherwise disturbed or potentially threatened in the region; the preservation as a southern representative of the sandstone ecosystems is highly important (DEE, 2017w).

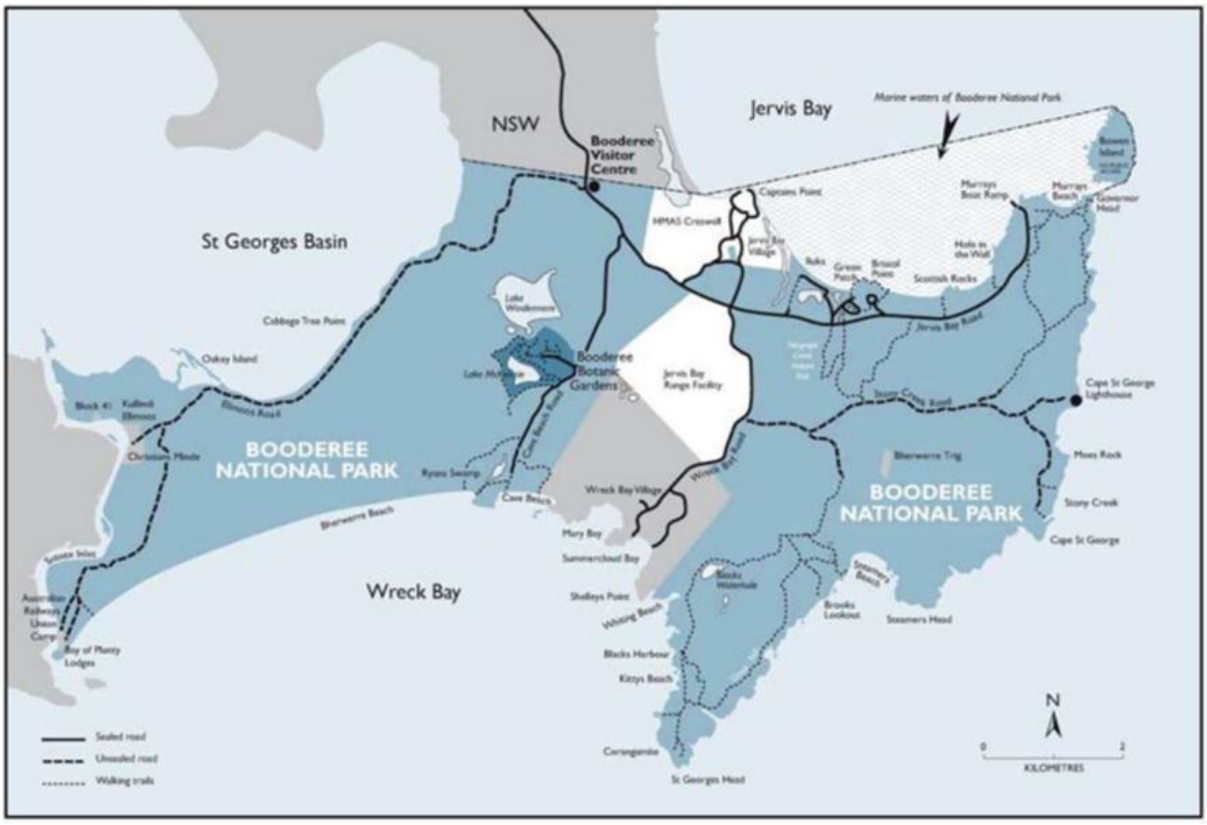


Figure 4-4: Location of Booderee National Park (Source: DNP, 2015)

4.4 Wetlands

4.4.1 Wetlands of International Importance

Under the Ramsar Convention, wetland types have been defined to identify the main wetland habitats represented at each site. The classification system uses three categories (with a number of wetland types within each): (i) Marine/Coastal Wetlands; (ii) Inland Wetlands; and (iii) Human-made Wetlands. The classification of a marine/coastal wetland is extensive and includes those wetlands that while predominantly based inland have some form of connection with the coast and/or marine waters.

Marine and coastal Wetlands of International Importance that have the potential to be contacted by hydrocarbons in a loss of containment event and intersect the Environmental Sectors are listed in Table 4-4 and displayed in Figure 4-5. A summary of key features of the wetlands is provided in Appendix 1 - .

Table 4-4: Marine/Coastal Zone Wetlands of International Importance within the Environmental Sectors[1]

Wetland	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Corio Bay		✓							
Corner Inlet		✓							
East Coast Cape Barren Island Lagoons		✓							
Elizabeth and Middleton Reefs Marine National Nature Reserve							✓		
Flood Plain Lower Ringarooma River		✓							
Gippsland Lakes			✓						
Glenelg Estuary and Discovery Bay	✓								
Great Sandy Strait							✓		
Hunter Estuary Wetlands						✓			
Lavinia		✓							
Logan Lagoon		✓							
Moreton Bay							✓		
Mud Island		✓							
Myall Lakes						✓			
Piccaninnie Ponds Karst Wetlands	✓								

Wetland	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Pitt Water-Orielton Lagoon					✓				
Point Cook		✓							
Port Phillip Bay (Western Shoreline) and Bellarine Peninsula		✓							
Swan Bay		✓							
Towra Point Nature Reserve						✓			
Werribee River		✓							
Western Port		✓							

Notes: No Wetlands of International Importance are present within Sorrell, Lord Howe or Norfolk zones.

4.4.2 Wetlands of National Importance

A classification system based on that used by the Ramsar Convention, but modified to suit Australia, has been used to classify Wetlands of National Importance. The classification system uses three categories (with a number of wetland types within each): (i) Marine and Coastal Zone wetlands; (ii) Inland wetlands; and (iii) Human-made wetlands. The classification of a marine and coastal zone wetland is extensive and includes those wetlands that while predominantly based inland have some form of connection with the coast and/or marine waters.

Marine and coastal zone Wetlands of National Importance have been identified within the Environmental Sectors and are listed in Table 4-5 and displayed in Figure 4-5. A summary of key ecological and social features is provided in Appendix 2 - .

Table 4-5: Marine and Coastal Zone Wetlands of National Importance within the Environmental Sectors

Wetland	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
South Australia									
Piccaninnie Ponds	✓								
South East Coastal Salt Lakes	✓								
Victoria									

Wetland	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Anderson Inlet		✓							
Corner Inlet		✓	✓						
Glenelg Estuary	✓								
Lake Bunga			✓						
Lake Connewarre State Wildlife Reserve		✓							
Lake King Wetlands			✓						
Lake Tyers			✓						
Lake Victoria Wetlands			✓						
Lower Aire River Wetlands	✓								
Lower Merri River Wetlands	✓								
Lower Snowy River Wetlands System			✓						
Mallacoota Inlet Wetlands			✓						
Mud Islands		✓							
Point Cook & Laverton Saltworks		✓							
Powlett River Mouth		✓							
Princetown Wetlands	✓								
Shallow Inlet Marine & Coastal Park		✓							
Sydenham Inlet Wetlands			✓						
Swan Bay & Swan Island		✓							
Tamboon Inlet Wetlands			✓						
Werribee-Avalon Area		✓							
Western Port		✓							
Yambuk Wetlands	✓								

Wetland	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Tasmania									
Boullanger Bay – Robbins Passage		✓							
Earlham Lagoon					✓				
Flyover Lagoon 1		✓							
Flyover Lagoon 2		✓							
Freshwater Lagoon					✓				
Lavinia Nature Reserve		✓							
Little Thirsty Lagoon		✓							
Logan Lagoon		✓							
Maria Island Marine Reserve					✓				
Moulting Lagoon					✓				
Orielton Lagoon					✓				
Pearshape Lagoon 1		✓							
Pearshape Lagoon 2		✓							
Pearshape Lagoon 3		✓							
Pearshape Lagoon 4		✓							
Rocky Cape Marine Area		✓							
Syndicate Lagoon		✓							
The Chimneys		✓							
Tregaron Lagoons 1		✓							
Tregaron Lagoons 2		✓							
Unnamed Wetland TAS010		✓							
Unnamed Wetland TAS051		✓							

Wetland	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Unnamed Wetland TAS052		✓							
Unnamed Wetland TAS081				✓					
New South Wales									
Avoca Lagoon						✓			
Beecroft Peninsula						✓			
Bondi Lake			✓						
Brisbane Water Estuary						✓			
Bundjalung National Park							✓		
Clarence River Estuary							✓		
Clybucca Creek Estuary						✓			
Clyde River Estuary			✓			✓			
Cockrone Lagoon						✓			
Coila Creek Delta			✓						
Coomonderry Swamp						✓			
Cormorant Beach						✓			
Crowdy Bay National Park						✓			
Cudgen Nature Reserve							✓		
Cullendulla Creek and Embayment						✓			
Durras Lake						✓			
Eve St. Marsh, Arncliffe						✓			
Five Islands Nature Reserve						✓			
Jervis Bay						✓			
Jervis Bay Sea Cliffs						✓			

Wetland	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Killalea Lagoon						✓			
Kooragang Nature Reserve						✓			
Lagoon Head						✓			
Lake Illawarra						✓			
Lake Hiawatha and Minnie Water							✓		
Limeburners Creek Nature Reserve						✓			
Merimbula Lake			✓						
Meroo Lake Wetland Complex						✓			
Minnamurra River Estuary						✓			
Moruya River Estuary Saltmarshes			✓						
Myall Lakes						✓			
Nadgee Lake and tributary wetlands			✓						
Nargal Lake			✓						
Nelson Lagoon			✓						
Pambula Estuarine Wetlands			✓						
Port Stephens Estuary						✓			
Shoalhaven/Crookhaven Estuary						✓			
Solitary Islands Marine Park							✓		
St Georges Basin						✓			
Swan Lagoon						✓			
Swan Pool/Belmore Swamp						✓			
Tabourie Lake						✓			
Termeil Lake Wetland Complex NSW						✓			

Wetland	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Terrigal Lagoon						✓			
Towra Point Estuarine Wetlands						✓			
Tuggerah Lake						✓			
Tuross River Estuary			✓						
Twofold Bay			✓						
Ukerebagh Nature Reserve							✓		
Waldrons Swamp			✓						
Wallaga Lake			✓						
Wallagoot Lagoon			✓						
Wallis Lake and adjacent estuarine islands						✓			
Wamberal Lagoon						✓			
Wollumboola Lake						✓			
Wooloweyah Lagoon							✓		
Queensland									
Bribie Island							✓		
Burrum Coast							✓		
Bustard Bay Wetlands							✓		
Colosseum Inlet – Rodds Bay							✓		
Deepwater Creek							✓		
Fraser Island							✓		
Great Barrier Reef Marine Park							✓		
Great Sandy Strait							✓		
Lake Coombabah							✓		

Wetland	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Lake Weyba							✓		
Lower Mooloolah River							✓		
Moreton Bay Aggregation							✓		
Noosa River Wetlands							✓		
North Stradbroke Island							✓		
Northeast Curtis Island							✓		
Pine River and Hays Inlet							✓		
Port Curtis							✓		
Pumicestone Passage							✓		
The Narrows							✓		
Upper Pumicestone Coastal Plain							✓		

Notes: No Wetlands of National Importance are present within the Lord Howe or Norfolk Island sectors.

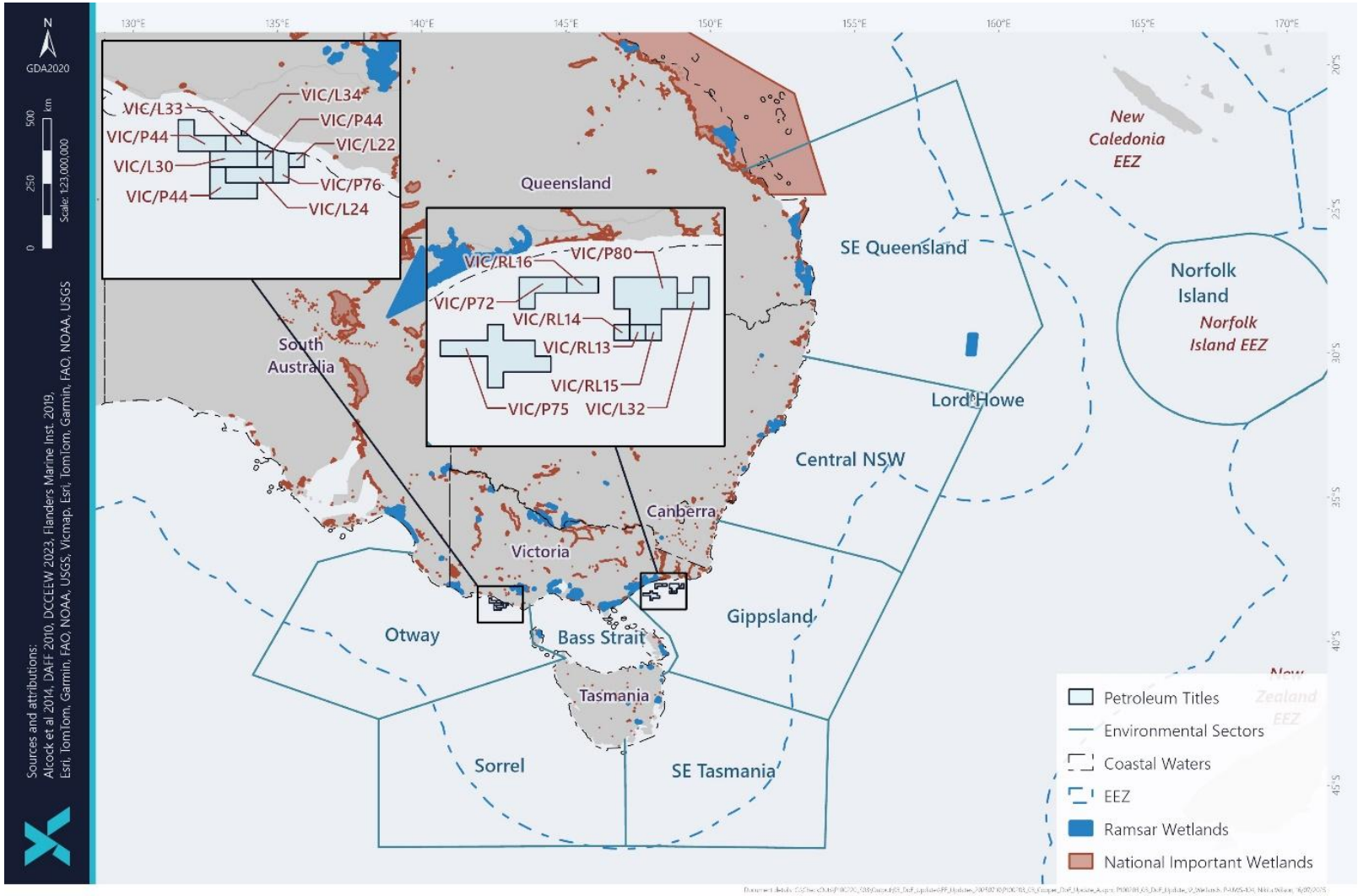


Figure 4-5: Wetlands of International (Ramsar) and National Importance within the Environmental Sectors

4.5 State Parks and Reserves

4.5.1 Marine Protected Areas

State marine protected areas are declared under each individual state's legislation and are managed by state authorities. State marine protected areas within the Environmental Sectors are listed in Table 4-6 and displayed in Figure 4-6 and Figure 4-7.

Table 4-6: State Marine Protected Areas within the Environmental Sectors

Marine Protected Area	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
South Australia									
Upper South East Marine Park	✓								
Lower South East Marine Park	✓								
Victoria									
Barwon Bluff Marine Sanctuary		✓							
Beware Reef Marine Sanctuary			✓						
Bunurong Marine National Park		✓							
Cape Howe Marine National Park			✓						
Churchill Island Marine National Park		✓							
Corner Inlet Marine & Coastal Park		✓							
Corner Inlet Marine National Park		✓							
Discovery Bay Marine National Park	✓								
Eagle Rock Marine Sanctuary		✓							
French Island Marine National Park		✓							
Jawbone Marine Sanctuary		✓							
Marengo Reefs Marine Sanctuary		✓							
Merri Marine Sanctuary	✓								
Mushroom Reef Marine Sanctuary		✓							

Marine Protected Area	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Ninety Mile Beach Marine National Park			✓						
Nooramunga Marine & Coastal Park		✓							
Point Addis Marine National Park		✓							
Point Cooke Marine Sanctuary		✓							
Point Danger Marine Sanctuary		✓							
Point Hicks Marine National Park			✓						
Port Phillip Heads Marine National Park		✓							
Ricketts Point Marine Sanctuary		✓							
Shallow Inlet Marine & Coastal Park		✓							
The Arches Marine Sanctuary	✓								
Twelve Apostles Marine National Park	✓								
Wilsons Promontory Marine National Park		✓							
Wilsons Promontory Marine Park		✓							
Wilsons Promontory Marine Park		✓							
Yaringa Marine National Park		✓							
Tasmania									
Blackman Rivulet Marine Conservation Area					✓				
Central Channel Marine Conservation Area					✓				
Cloudy Bay Marine Conservation Area					✓				
Governor Island Marine Park					✓				
Hippolyte Rocks Marine Conservation Area					✓				
Huon Estuary Marine Conservation Area					✓				
Kent Group Marine Park		✓							

Marine Protected Area	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Maria Island Marine Park					✓				
Monk Bay Marine Conservation Area					✓				
Ninepin Point Marine Park					✓				
Opossum Bay Marine Conservation Area					✓				
Port Cygnet Marine Conservation Area					✓				
Port Davey Marine Park				✓					
River Derwent Marine Conservation Area					✓				
Roberts Point Marine Conservation Area					✓				
Simpsons Point Marine Conservation Area					✓				
Sloping Island Marine Conservation Area					✓				
South Arm Marine Conservation Area					✓				
Tinderbox Marine Park					✓				
Waterfall–Fortescue Marine Conservation Area					✓				
New South Wales									
Barrenjoey Head Aquatic Reserve						✓			
Batemans Marine Park			✓			✓			
Boat Harbour Aquatic Reserve						✓			
Bronte-Coogee Aquatic Reserve						✓			
Bushranger's Bay Aquatic Reserve						✓			
Cabbage Tree Bay Aquatic Reserve						✓			
Cape Banks Aquatic Reserve						✓			
Cape Byron Marine Park							✓		
Cook Island Aquatic Reserve							✓		

Marine Protected Area	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Jervis Bay Marine Park						✓			
Long Reef Aquatic Reserve						✓			
Lord Howe Island Marine Park								✓	
Narrabeen Head Aquatic Reserve						✓			
North (Sydney) Harbour Aquatic Reserve						✓			
Port Stephens Great Lakes Marine Park						✓			
Shiprock Aquatic Reserve						✓			
Solitary Islands Marine Park						✓	✓		
Towra Point Aquatic Reserve						✓			
Queensland									
Great Barrier Reef Coast Marine Park							✓		
Great Sandy Marine Park							✓		
Moreton Bay Marine Park							✓		
External Territories									
Norfolk Marine Park									✓

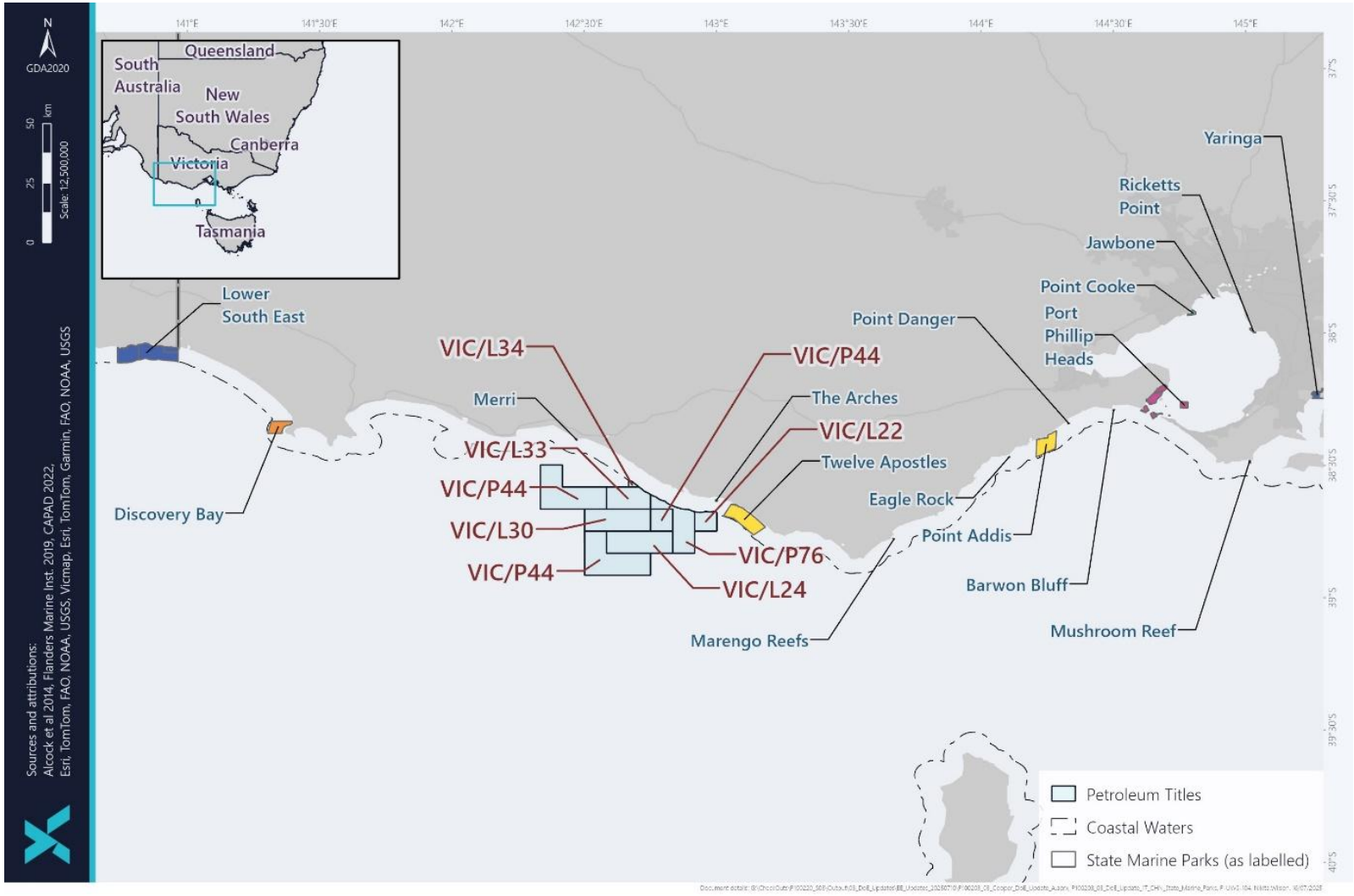


Figure 4-6: State Marine Parks within the Vicinity of the Otway Basin

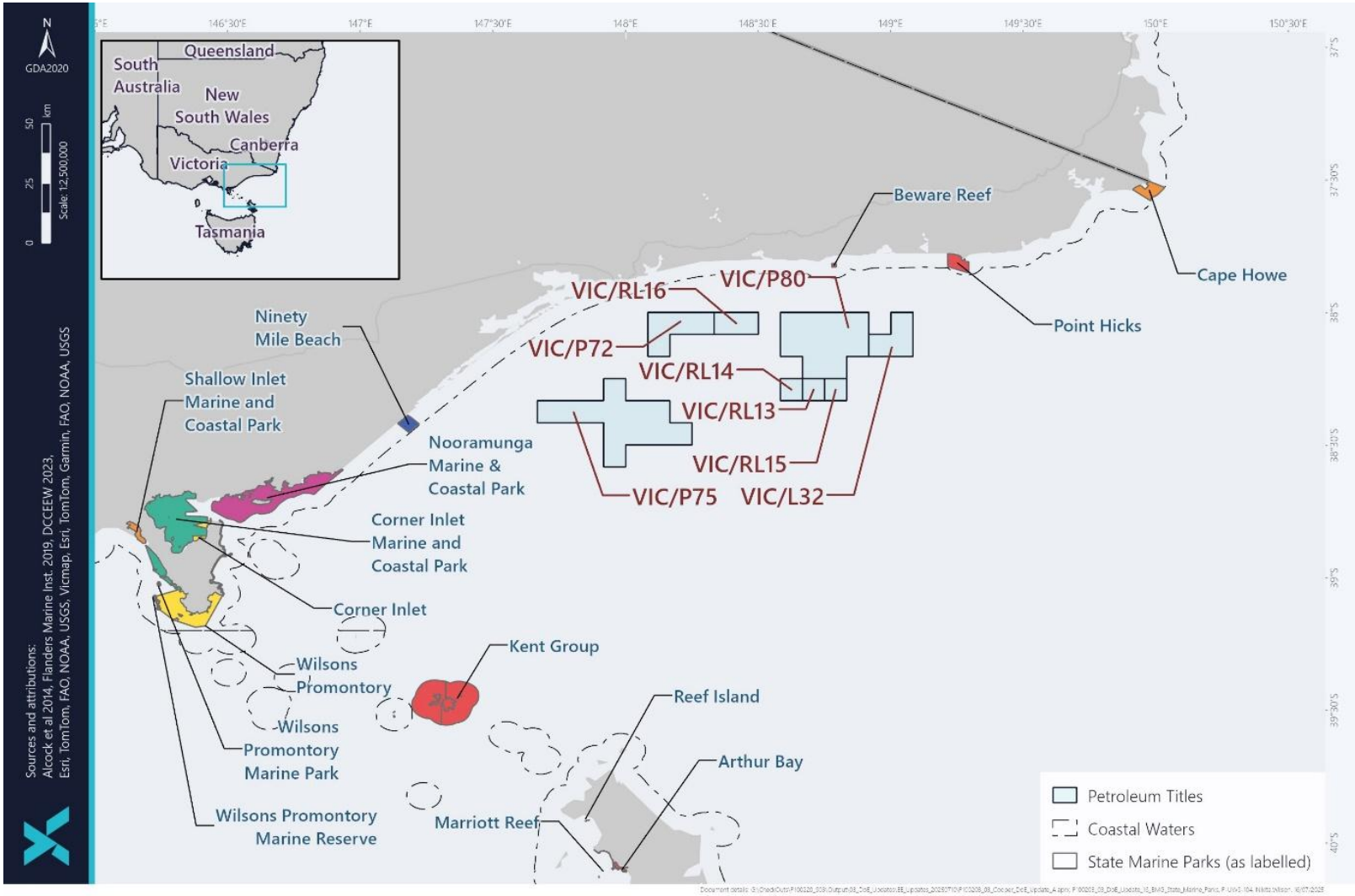


Figure 4-7: State Marine Parks within the Vicinity of the Gippsland Basin

4.5.2 Terrestrial Protected Areas

State terrestrial protected areas are declared under each individual state's legislation and are managed by state authorities. State terrestrial protected areas within the Environmental Sectors are listed in Table 4-7.

Table 4-7: State Terrestrial Protected Areas within the Environmental Sectors

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
South Australia									
Beachport Conservation Park	✓								
Bernouilli Conservation Park	✓								
Canunda National Park	✓								
Douglas Point Conservation Park	✓								
Guichen Bay Conservation Park	✓								
Little Dip Conservation Park	✓								
Penguin Island Conservation Park	✓								
Piccaninnie Ponds Conservation Park	✓								
Victoria									
Aire River Heritage River	✓								
Anser Island Reference Area		✓							
Bay of Islands Coastal Park	✓								
Bemm, Goolengook, Arte and Errinundra Rivers Heritage River			✓						
Cape Conran Coastal Park			✓						
Cape Howe Wilderness Zone			✓						
Cape Liptrap Coastal Park		✓							
Cape Nelson State Park	✓								
Croajingolong National Park			✓						

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Deen Maar (Lady Julia Percy Island) W.R. Nature Conservation Reserve	✓								
Discovery Bay Coastal Park	✓								
East Gippsland Coastal streams Natural Catchment Area			✓						
Entrance Point Reference Area		✓							
Ewing Morass W.R Natural Feature Reserve			✓						
Fossil Beach G.R. Natural Features Reserve		✓							
French Island National Park		✓							
Gippsland Lakes Coastal Park			✓						
Glenelg River Heritage River	✓								
Great Otway National Park	✓	✓							
Jawbone F.F.R. Nature Conservation Reserve		✓							
Lake Tyres State Park			✓						
Lawrence Rocks W.R. Nature Conservation Reserve	✓								
Limeburners Lagoon (Hovells Creek) F.F.R Nature Conservation Reserve		✓							
Mornington Peninsula National Park		✓							
Mount Vereker Creek Natural Catchment Area		✓							
North Western Port N.C.R. Natural Features Reserve		✓							
Phillip Island Nature Park		✓							
Point Nepean National Park		✓							
Port Campbell National Park	✓								
Rame Head Remote and Natural Area			✓						

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Reef Island and Bass River Mouth N.C.R Natural Features Reserve		✓							
Sandpatch Wilderness Zone			✓						
Seal Islands W.R. Nature Conservation Reserve		✓							
Southern Wilsons Promontory Remote and Natural Area		✓							
Swan Bay - Edwards Point W.R Nature Conservation Reserve		✓							
The Spit W.R. Nature Conservation Reserve		✓							
Vereker Creek Reference Area		✓							
Wilsons Promontory Islands Remote and Natural Area		✓							
Wilsons Promontory National Park		✓							
Wilsons Promontory Wilderness Zone		✓							
Yambuk F.F.R. Nature Conservation Reserve	✓								
Tasmania									
Actaeon Island Game Reserve				✓					
Albatross Island Nature Reserve	✓								
Anderson Islands Conservation Area		✓							
Apex Point Conservation Area					✓				
Bass Pyramid Nature Reserve		✓							
Battery Island Conservation Area		✓							
Bay of Fires Conservation Area		✓			✓				
Baynes Island Nature Reserve		✓							
Bellettes Bay Conservation Area					✓				
Betsey Island Nature Reserve					✓				

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Big Bay Conservation Area		✓							
Big Green Island Nature Reserve		✓							
Bird Island Game Reserve	✓								
Bligh Point Conservation Area					✓				
Blyth Point Conservation Area		✓							
Boltons Beach Conservation Area					✓				
Boobyalla Conservation Area		✓							
Boot Bay Conservation Area					✓				
Boxen Island Conservation Area		✓							
Brick Islands Conservation Area		✓							
Briggs Islet Conservation Area		✓							
Brother and Sister Conservation Area					✓				
Bruny Island Neck Game Reserve					✓				
Bull Rock Conservation Area		✓							
Bun Beetons Point Conservation Area		✓							
Burnett Point Conservation Area					✓				
Calm Bay State Reserve				✓					
Cape Bernier Nature Reserve					✓				
Cape Contrariety Private Sanctuary					✓				
Cape de la Sortie Conservation Area					✓				
Cape Deslacs Nature Reserve					✓				
Cape Portland Conservation Area		✓							
Cape Portland Private Sanctuary		✓							

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Cape Wickham Conservation Area	✓								
Cat Island Conservation Area		✓							
Cataraqui Point Conservation Area	✓								
Chalky Island Conservation Area		✓							
Christmas Island Nature Reserve	✓								
Chronicle Point Conservation Area					✓				
Chuckle Head Conservation Area					✓				
City of Melbourne Bay Conservation Area	✓								
Clifton Beach Conservation Area					✓				
Coal Point Conservation Area					✓				
Coles Bay Conservation Area					✓				
Cone Islet Conservation Area		✓							
Coningham Nature Recreation Area					✓				
Coswell Beach Conservation Area					✓				
Cressy Beach Conservation Area					✓				
Councillor Island Nature Reserve	✓								
Craggy Island Conservation Area		✓							
Crooked Billet Bay Conservation Area					✓				
Curtis Island Nature Reserve		✓							
Dart Island State Reserve					✓				
Denison Rivulet Conservation Area					✓				
Devils Tower Nature Reserve		✓							
Diamond Island Nature Reserve					✓				

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Doctors Rocks Conservation Area		✓							
Don Heads Conservation Area		✓							
Double Sandy Point Conservation Area		✓							
Doughboy Island Conservation Area		✓							
Disappointment Bay State Reserve	✓								
Eaglehawk Bay State Reserve					✓				
Eaglehawk Bay-Flinders Bay Conservation Area					✓				
East Kangaroo Island Nature Reserve		✓							
East Moncoeur Island Conservation Area		✓							
East Risdon State Reserve					✓				
Echo Sugarloaf State Reserve					✓				
Edgcumbe Beach Conservation Area		✓							
Egg Beach Egg Beach		✓							
Emita Nature Recreation Area		✓							
Esperance Point Conservation Area					✓				
Fannys Bay Conservation Area		✓							
Five Mile Bluff Conservation Area		✓							
Foochow Conservation Area		✓							
Forsyth Island Conservation Area		✓							
Forwards Beach Conservation Area		✓							
Fossil Bluff Conservation Area		✓							
Fossil Cove Conservation Area					✓				
Foster Island Nature Reserve		✓							

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Fotheringate Bay Conservation Area		✓							
Four Mile Beach Regional Reserve				✓					
Four Mile Creek Conservation Area					✓				
Freycinet National Park					✓				
Gellibrand Point Nature Recreation Area					✓				
George Rocks Nature Reserve		✓							
Goose Island Conservation Area		✓							
Granite Point Conservation Area		✓							
Green Island Nature Reserve					✓				
Greens Beach Conservation Area		✓							
Gull Island Conservation Area		✓							
Harbour Islets Conservation Area	✓								
Harcus Island Conservation Area		✓							
Henderson Islets Conservation Area	✓								
Hogan Group Conservation Area		✓							
Holts Point Conservation Area		✓							
Hope Island Nature Recreation Area					✓				
Humbug Point Nature Recreation Area					✓				
Hunter Island Conservation Area	✓								
Ile des Phoques Nature Reserve					✓				
Iron Pot State Reserve					✓				
Isabella Island Nature Reserve		✓							
Jacksons Cove Conservation Area		✓							

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Kangaroo Island Conservation Area		✓							
Kelvedon Beach Conservation Area					✓				
Killiecrankie Nature Recreation Area		✓							
Lachlan Island Nature Reserve					✓				
Lagoons Beach Conservation Area					✓				
Lavinia State Reserve	✓								
Little Chalky Island Conservation Area		✓							
Little Dog Island Game Reserve		✓							
Little Green Island Conservation Area		✓							
Little Island Conservation Area		✓							
Little Peggs Beach State Reserve		✓							
Little Swan Island Nature Reserve		✓							
Little Trefoil Conservation Area	✓								
Little Waterhouse Island Nature Reserve		✓							
Lime Bay State Reserve					✓				
Little Beach Conservation Area					✓				
Little Christmas Island Nature Reserve					✓				
Little Swanport Conservation Area					✓				
Logan Lagoon Conservation Area		✓							
Long Bay Conservation Area					✓				
Long Island Conservation Area		✓							
Long Spit Private Nature Reserve					✓				
Low Head Conservation Area		✓							

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Low Islets Nature Reserve		✓							
Low Point Conservation Area		✓							
Maria Island National Park					✓				
Marion Beach Conservation Area					✓				
Marks Point Conservation Area					✓				
Marshall Beach Conservation Area		✓							
Mayfield Bay Conservation Area					✓				
Mile Island Conservation Area		✓							
Millingtons Beach Conservation Area					✓				
Montagu Island Conservation Area		✓							
Mount Heemskirk Regional Reserve				✓					
Mount Tanner Nature Recreation Area		✓							
Mount William National Park		✓			✓				
Musselroe Bay Conservation Area		✓							
Narawntapu National Park		✓							
Nares Rocks Conservation Area	✓								
Neds Reef Conservation Area		✓							
New Year Island Game Reserve	✓								
Night Island Conservation Area		✓							
Ninth Island Conservation Area		✓							
Norfolk Bay Conservation Area					✓				
North East Islet Nature Reserve		✓							
North East River Game Reserve		✓							

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
North Passage Point Conservation Area					✓				
North West Head Conservation Area					✓				
Ocean Beach Conservation Area				✓					
Outer North Head Conservation Area					✓				
Oyster Rocks Conservation Area		✓							
Palana Beach Nature Recreation Area		✓							
Passage Island Conservation Area		✓							
Pasco Group Conservation Area		✓							
Patriarchs Conservation Area		✓							
Peggs Beach Conservation Area		✓							
Pelican Island Conservation Area				✓					
Penguin Islet Nature Reserve		✓							
Perkins Island Conservation Area		✓							
Petrel Islands Game Reserve		✓							
Pitt Water Nature Reserve					✓				
Porky Beach Conservation Area	✓								
Prime Seal Island Conservation Area		✓							
Ram Island Conservation Area		✓							
Recherche Bay Nature Recreation Area				✓					
Red Hut Point Conservation Area	✓								
Rocky Cape National Park		✓							
Rodondo Island Nature Reserve		✓							
Roydon Island Conservation Area		✓							

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Sea Elephant Conservation Area	✓								
Seal Rocks State Reserve	✓								
Seacrow Islet Conservation Area	✓								
Sellars Lagoon Game Reserve		✓							
Sentinel Island Conservation Area		✓							
Settlement Point Conservation Area		✓							
Seymour Conservation Area					✓				
Single Tree Plain Conservation Area		✓							
Sisters Island Conservation Area		✓							
Slaves Bay Conservation Area				✓					
Snake Bay Conservation Area					✓				
South Bruny National Park					✓				
Southport Lagoon Conservation Area				✓					
Southwest National Park				✓					
Spike Island Conservation Area		✓							
Stack Island Game Reserve	✓								
Stanley Conservation Area		✓							
Stokes Point Conservation Area	✓								
Storehouse Island Conservation Area		✓							
Strzelecki National Park		✓							
Sugarloaf Rock Conservation Area		✓							
Sundown Point State Reserve				✓					
Table Cape Conservation Area		✓							

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Table Cape State Reserve		✓							
Tasman National Park					✓				
Tatlows Beach Conservation Area		✓							
Tenth Island Nature Reserve		✓							
The Doughboys Nature Reserve	✓								
The Nut State Reserve		✓							
Three Hummock Island State Reserve		✓							
Three Sisters-Goat Island Nature Reserve		✓							
Trial Harbour State Reserve				✓					
Trousers Point Beach Conservation Area		✓							
Vansittart Island Conservation Area		✓							
Wallaby Islands Conservation Area		✓							
Waterhouse Conservation Area		✓							
Waterhouse Island Conservation Area		✓							
Wedge Island Conservation Area					✓				
West Coast Range Regional Reserve				✓					
West Moncoeur Island Nature Reserve		✓							
West Point State Reserve				✓					
White Beach Conservation Area		✓							
Wright Rock Nature Reserve		✓							
Wybalenna Island Conservation Area		✓							
New South Wales									
Arakoon National Park						✓			

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Arakwal National Park							✓		
Awabakal Nature Reserve						✓			
Belowla Nature Reserve						✓			
Ben Boyd National Park			✓						
Biamanga National Park			✓						
Billinudgel Nature Reserve							✓		
Bird Island Nature Reserve						✓			
Bongil Bongil National Park						✓			
Booderee National Park (Commonwealth)[6]						✓			
Boondelbah Nature Reserve						✓			
Booti Booti National Park						✓			
Bouddi National Park						✓			
Bournda National Park			✓						
Brisbane Water National Park						✓			
Broken Head Nature Reserve							✓		
Broulee Island Nature Reserve			✓						
Brush Island Nature Reserve						✓			
Bundjalung National Park							✓		
Bushy Island Nature Reserve						✓			
Cape Byron State Conservation Area							✓		
Coffs Coast Regional Park						✓	✓		
Comerong Island Nature Reserve						✓			

[6] Booderee National Park is located in NSW; however, it is under DCCEEW (Commonwealth) authority.

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Conjola National Park						✓			
Cook Island Nature Reserve							✓		
Corrie Island Nature Reserve						✓			
Crowdy Bay National Park						✓			
Cudgen Nature Reserve							✓		
Cullendulla Creek Nature Reserve			✓			✓			
Darawank Nature Reserve						✓			
Eagles Claw Nature Reserve			✓						
Eurobodalla National Park			✓						
Five Islands Nature Reserve						✓			
Gaagal Wanggaan (South Beach) National Park						✓			
Gir-um-bit National Park						✓			
Gir-um-bit State Conservation Area						✓			
Glenrock State Conservation Area						✓			
Goolawah National Park						✓			
Goolawah Regional Park						✓			
Hat Head National Park						✓			
Jagun Nature Reserve						✓			
Jervis Bay National Park						✓			
John Gould Nature Reserve						✓			
Julian Rocks Nguthungulli Nature Reserve							✓		
Kamay Botany Bay National Park						✓			
Kattang Nature Reserve						✓			

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Karuah Nature Reserve						✓			
Khappinghat Nature Reserve						✓			
Ku-ring-gai Chase National Park						✓			
Limeburners Creek National Park						✓			
Lion Island Nature Reserve						✓			
Little Broughton Island Nature Reserve						✓			
Long Island Nature Reserve						✓			
Lord Howe Island Permanent Park Preserve								✓	
Malabar Headland National Park						✓			
Marramarra National Park						✓			
Meroo National Park						✓			
Mimosa Rocks National Park			✓						
Montague Island Nature Reserve			✓						
Moon Island Nature Reserve						✓			
Moonee Beach Nature Reserve						✓			
Munmorah State Conservation Area						✓			
Muogamarra Nature Reserve						✓			
Murramarang National Park						✓			
Muttonbird Island Natures Reserve						✓			
Myall Lakes National Park						✓			
Nadgee Nature Reserve			✓						
Narrawallee Creek Nature Reserve						✓			
North Rock Nature Reserve							✓		

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
North Solitary Island Nature Reserve							✓		
North West Solitary Island Nature Reserve							✓		
One Tree Island Nature Reserve						✓			
Richmond River Nature Reserve							✓		
Royal National Park						✓			
Saltwater National Park						✓			
Sea Acres National Park						✓			
Seal Rocks Nature Reserve						✓			
Shark Island Nature Reserve						✓			
Snapper Island Nature Reserve						✓			
South West Solitary Island Nature Reserve							✓		
Spectacle Island Nature Reserve						✓			
Split Solitary Island Nature Reserve						✓			
Stormpetrel Nature Reserve						✓			
Sydney Harbour National Park						✓			
Tilligerry Nature Reserve						✓			
Tollgate Islands Nature Reserve			✓						
Tomaree National Park						✓			
Towra Point Nature Reserve						✓			
Tyagarah Nature Reserve							✓		
Wallarah National Park						✓			
Wamberal Lagoon Nature Reserve						✓			
Wooyung Nature Reserve							✓		

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Worimi Regional Park						✓			
Wyrrabalong National Park						✓			
Yuragir National Park							✓		
Queensland									
Beachmere Conservation Park							✓		
Bird Island Conservation Park							✓		
Bribie Island National Park							✓		
Broadwater Conservation Park							✓		
Buckleys Hole							✓		
Burleigh Head National Park							✓		
Burrum Coast National Park							✓		
Cabbage Tree Point Conservation Park							✓		
Capricornia Cays National Park							✓		
Curtis Island National Park							✓		
Deepwater National Park							✓		
Eurimbula National Park							✓		
Eurimbula Resources Reserve							?		
Ex-HMAS Brisbane Regional Park							✓		
Fort Lytton National Park							✓		
Goat Island Conservation Park							✓		
Great Sandy Conservation Park							✓		
Great Sandy National Park							✓		
Joseph Banks Conservation Park							✓		

Terrestrial Protected Areas	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Main Beach Conservation Park							✓		
Maroochy River Conservation Park							✓		
Mon Repos Regional Park							✓		
Moreton Island							✓		
Mouth of Baffle Creek							✓		
Mouth of Kolan River Conservation Park							✓		
Mud Island Conservation Park							✓		
Naree Budjong Djara National Park							✓		
Noosa National Park							✓		
South Stradbroke Island Conservation Park							✓		
Southern Moreton Bay Islands National Park							✓		
St Helena Island National Park							✓		
Teerk Roo Ra Conservation Park							✓		
Teerk Roo Ra National Park Aboriginal							✓		
Wild Cattle Island National Park							✓		
External Territories									
Norfolk Island Botanic Gardens									✓
Norfolk Island National Park									✓

4.6 Key Ecological Features

Key Ecological Features (KEF) are elements of the Commonwealth marine environment that are considered to be of regional importance for either a region's biodiversity or its ecosystem function and integrity. Seventeen KEFs occur within the Environmental Sectors (Figure 4-8; Table 4-8).

Table 4-8: Key Ecological Features present within the Environmental Sectors

Key Ecological Features	Values and Description[1, 2, 3]	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Big Horseshoe Canyon	High productivity, aggregations of marine life The Big Horseshoe Canyon is the easternmost arm of the Bass Canyon systems. The steep, rocky slopes provide hard substrate habitat for attached large megafauna. Sponges and other habitat forming species provide structural refuges for benthic fishes, including the commercially important pink ling. It is the only known temperate location of the stalked crinoid Metacrinus cyaneu.			✓						
Bonney Coast Upwelling	High productivity, aggregations of marine life The Bonney Coast Upwelling is a predictable, seasonal upwelling bringing cold nutrient rich water to the sea surface and supporting regionally high productivity and high species diversity in an area where such sites are relatively rare and mostly of smaller scale. It is one of 12 widely recognised and well-known areas worldwide where blue whales are known to feed in relatively high numbers. The area is significant as one of the largest and most predictable upwellings in south-eastern Australia. This is not the only upwelling in southeast Australia driven by the prevailing south-easterly winds, but it is the most prominent. In addition to whales, many endangered and listed species frequent the area, possibly also relying on the abundance of krill that provide a food source to many seabirds and fish. The high productivity of the Bonney Upwelling is also capitalised on by other higher predator species such as little penguins and Australian fur seals feeding on baitfish.	✓								
Canyons on the Eastern Continental Slope	Unique sea-floor feature with ecological properties of regional significance Canyon systems have a marked influence on the diversity and abundance of species, driven by the combined effects of steep and rugged topography, ocean currents, sea-floor types and nutrient availability. They significantly contribute to the overall habitat diversity of the			✓			✓	✓		

Key Ecological Features	Values and Description[1, 2, 3]	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	sea floor, by providing hard surfaces in depth zones where soft sediment habitats prevail. Large benthic animals such as sponges and feather stars are abundant, with particularly high diversity found in the upper slope regions (150–700 m). Canyons also create localised changes in productivity in the water column above them, providing feeding opportunities for a range of species, many of which are commercially important or threatened.									
East Tasmania Subtropical Convergence Zone	High productivity, aggregations of marine life This zone of enhanced pelagic productivity occurs where eddies of the East Australian Current interact with subantarctic waters driven by westerly winds. The northern and southern extent of the feature are approximately level with the north-east tip of Tasmania and the Tasman Peninsula. This is a complex feature that is characterised by autumn and spring phytoplankton blooms that form the basis of a productive food chain which supports cetaceans, seals, sharks and seabirds. The phytoplankton blooms also attract migratory commercial fish stocks such as Southern bluefin tuna, barracouta, and jack mackerel. Phytoplankton blooms are important for krill, which in turn form an important component of the diet of many pelagic species. *This KEF has not yet been spatially defined.					✓				
Elizabeth and Middleton Reefs	Aggregations of marine life; biodiversity and endemism Elizabeth and Middleton reefs are small, isolated, oceanic platform reefs that occur on top of the volcanic seamounts of the Lord Howe seamount chain. The reefs are impacted by the East Australian Current, exposing the area to its warm waters as well as the surrounding cooler ocean. This key ecological feature supports tropical and temperate marine life, including both warm and cold-water corals and over 300 fish species. The lagoons of both reefs are important areas for populations of black cod and the Galapagos shark.							✓		

Key Ecological Features	Values and Description[1, 2, 3]	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Lord Howe Seamount Chain	High productivity; aggregations of marine life; biodiversity and endemism. The Lord Howe seamount chain runs for approximately 1000 km along the western margin of the Lord Howe Rise, extending from Lord Howe Island in the south to Nova Bank in the north. It supports tropical shallow coral reefs and deep cold-water corals.						✓	✓	✓	
Norfolk Ridge	Enhanced ecological functioning and integrity, and biodiversity, which apply to both its benthic and pelagic habitats. Stretching across the Temperate East Marine Region, the Norfolk Ridge provides a rich biological source of benthic biodiversity and endemism. Similarly, to the Lord Howe chain, the ridge also generates localised oceanographic changes which create sites of enhanced productivity and aggregate marine species.									✓
Seamounts South and East of Tasmania	High productivity, aggregations of marine life. These seamounts are a chain or cluster of seamounts rising from the abyssal plain, continental rise or plateau situated 200 km or more from shore (east of Flinders Island to south east of southern Tasmania). Seamounts can sometimes influence and intensify currents, creating localised upwelling and turbulent mixing. Accelerated water flows are thought to create upwellings of nutrient rich waters from the seafloor. Seamounts with hard substrate summits and slopes provide attachment points for sessile invertebrates, while the soft sediments can be habitat for species that burrow into the sediments.			✓	✓	✓				
Shelf Rocky Reefs	Unique sea-floor feature with ecological properties of regional significance. Along the continental shelf south of the Great Barrier Reef, communities associated with the shift from algae-dominated sea-floor communities to those dominated by attached invertebrates (including large sponges, moss animals and soft corals). This shift generally occurs at a depth of 45 m. These invertebrates create a complex habitat that supports a			✓			✓	✓		

Key Ecological Features	Values and Description[1, 2, 3]	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	multitude of animals including crabs, snails, worms and starfish. The habitats also contain a diverse assemblage of bottom-dwelling fishes that show distinct patterns of association with shelf-reef habitats.									
Shelf Rocky Reefs and Hard Substrates	High productivity, aggregations of marine life. Rocky reefs and hard grounds are located in all areas of the South-east Marine Region continental shelf including Bass Strait, from the sub-tidal zone shore to the continental shelf break. The continental shelf break generally occurs in 50 m to 150–220 m water depth. The shallowest depth at which the rocky reefs occur in Commonwealth waters is approximately 50 m. On the continental shelf, rocky reefs and hard grounds provide attachment sites for macroalgae and sessile invertebrates, increasing the structural diversity of shelf ecosystems. The reefs provide habitat and shelter for fish and are important for aggregations of biodiversity and enhanced productivity. **Note This KEF has not yet been spatially defined.*	✓	✓	✓	✓	✓				
Tasman Front and Eddy Field	High productivity; aggregations of marine life; biodiversity and endemism The Tasman Front is a region of intermediate productivity that separates the warm, nutrient-poor waters of the Coral Sea from the cold, nutrient-rich waters of the Tasman Sea. The front is located between 27º S and 33º S, moving north during winter and south in summer. It is associated with warm-core eddies, a number of which are semipermanent features.						✓	✓	✓	✓
Tasmantid Seamount Chain	High productivity; aggregations of marine life; biodiversity and endemism The Tasmantid seamount chain is a prominent chain of underwater volcanic mountains, plateaux and terraces that runs north–south at approximately 155° E, extending into the Tasman Basin. At the deepest point of the chain, features rise to a depth of 1400–900 m below sea level. At the northernmost extent, features rise to a depth of 400–150 m below						✓	✓		

Key Ecological Features	Values and Description[1, 2, 3]	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	sea level, with some breaking the surface to form islands. The Tasmantid seamount chain contains a range of habitats, from deep sea sponge gardens to near-pristine tropical coral reef systems. Collectively, these are biological hotspots with high species diversity. They are also known feeding and breeding grounds for a number of open ocean species (e.g. billfish, marine turtles, marine mammals) and have high species endemism.									
Upwelling off Fraser Island	High productivity; aggregations of marine life In two areas near Fraser Island, upwellings of cold, deep waters mix with surface waters. Tides, wind and currents draw these nutrient-rich waters onto the shelf, where they generate blooms of phytoplankton that support animals higher in the food chain, including a number of commercially valuable and threatened species.							✓		
Upwelling East of Eden	High productivity, aggregations of marine life Dynamic eddies of the East Australian Current cause episodic productivity events when they interact with the continental shelf and headlands. The episodic mixing and nutrient enrichment events drive phytoplankton blooms that are the basis of productive food chains including zooplankton, copepods, krill and small pelagic fish. 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.			✓			✓			
West Tasmania Canyon	High productivity, aggregations of marine life The West Tasmania Canyons are located on the edge of the continental shelf offshore of the north-west corner of Tasmania and as far south as Macquarie Harbour. These canyons can influence currents, act as sinks for rich organic sediments and debris, and can trap waters or create upwellings that result in productivity and biodiversity hotspots. For example, plumes of	✓			✓					

Key Ecological Features	Values and Description[1, 2, 3]	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	sediment and nutrient-rich water can be seen at or near the heads of canyons. Sponges are concentrated near the canyon heads, with the greatest diversity between 200 m and 350 m depth. Sponges are associated with abundance of fishes, and the canyons support a diversity of sponges comparable to that of seamounts.									

Notes:

1.Values and Descriptions as provided in DoE, 2015a.

2.Values and Descriptions as provided in DSEWPaC, 2012e.

3.Values and Descriptions as provided in DNP, 2018b.

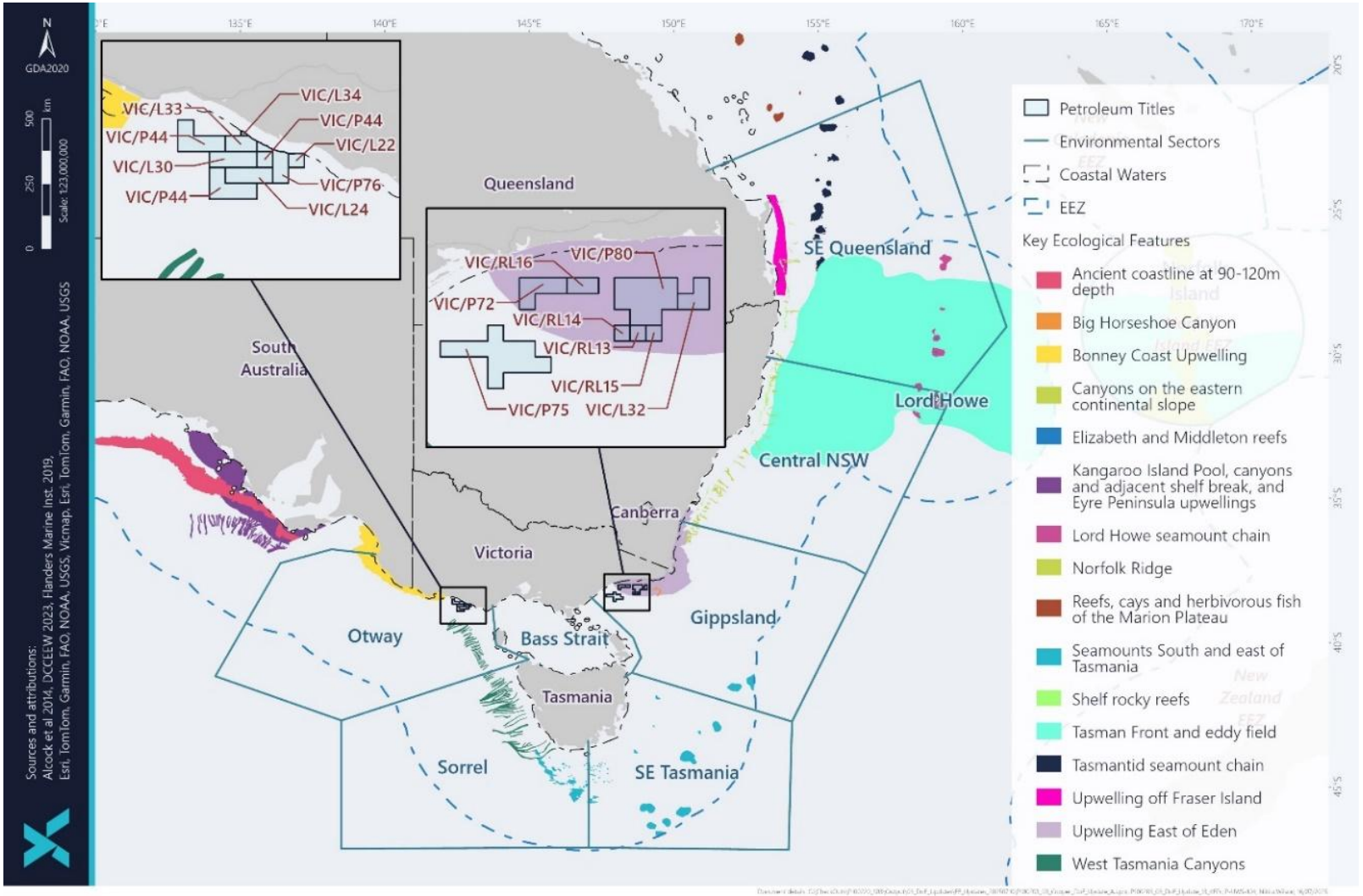


Figure 4-8: Key Ecological Features within the Environmental Sectors

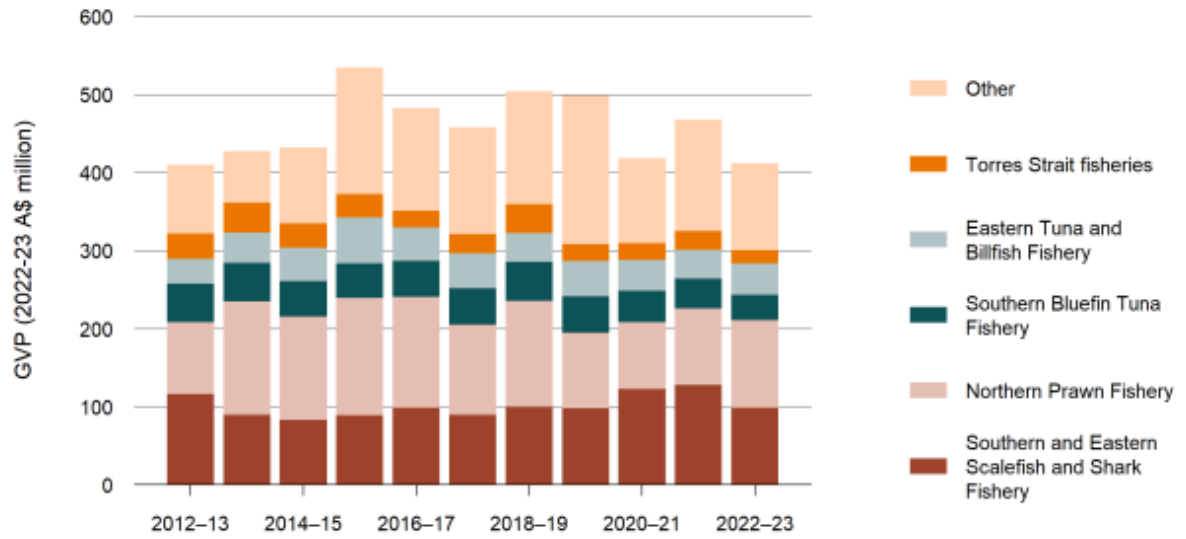
5.0 Social Environment

5.1 Commercial Fisheries

5.1.1 Commonwealth-Managed Fisheries

Commonwealth fisheries are managed by the Australian Fisheries Management Authority (AFMA) under the Fisheries Management Act 1991 (Cth), with the fisheries typically operating within 3 nm of the coast to 200 nm offshore (i.e. to the extent of the Australian Fishing Zone). Some Commonwealth managed fisheries extend into state waters through Offshore Constitutional Settlement (OCS) arrangements.

In 2021-22 the Gross Value of Production (GVP) from Commonwealth fisheries was estimated at $437 million; accounting for 29% of wild-catch fisheries GVP in Australia ($1.51 billion, Figure 5-1) (Butler, et al., 2024).



GVP Gross value of production.
Note: GVP figures are subject to revision and, consequently, may differ in past and future publications.

Figure 5-1: Ten-year Outlook from Gross Value of Production of Commonwealth Fisheries (Source: Butler, et al., 2024)

There are 7 commonwealth-managed commercial fisheries with management areas overlapping the Environmental Sectors (Table 5-1). Of these fisheries, 6 managed commercial fisheries had fishing efforts recorded within the 2016-2023 Catch and Effort System (CAES) reporting grids within the Otway and/or Bass Strait and/or Gippsland Environmental Sectors (Butler, et al., 2024) which include:

- Bass Strait Central Zone Scallop Fishery
- Eastern Tuna and Billfish Fishery
- Southern and Eastern Scalefish and Shark Fishery (SESSF) sectors and sub-sectors including:
  - SESSF Cth Trawl Sector (commonly referred to as the South East Trawl Fishery)
  - SESSF Scalefish Hook Sector
  - SESSF Shark Hook and Gillnet sector

  - SESSF Trap sector
- Southern Bluefin Tuna Fishery
- Small Pelagic Fishery
- Southern Squid Jig Fishery.

Amplitude Energy commissioned SETFIA (the South East Trawl Fishing Industry Association) to undertake a study into the commercial fishing effort (Commonwealth and State) within the BMG field area in 2020 (SETFIA, 2020) located within the Gippsland Environmental Sector. Results of this study are included in the sections below where relevant.

Table 5-1: Commonwealth-managed Commercial Fisheries with Management Areas the Environmental Sectors

Fishery	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Bass Strait Central Zone Scallop (BSCZSF)	✓	✓f	✓f						
Coral Sea Fishery (CSF)							✓f		
Eastern Skipjack Fishery (ESF)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Eastern Tuna and Billfish Fishery (ETBF)	✓	✓f	✓f	✓f	✓f	✓f	✓f	✓f	✓f
Norfolk Island Offshore Demersal Finfish Fishery^									✓
Small Pelagic Fishery (SPF)	✓	✓	✓	✓	✓	✓	✓	✓	
Southern Bluefin Tuna Fishery (SBTF)	✓f	✓	✓f	✓f	✓f	✓f	✓	✓	✓
Southern and Eastern Scalefish and Shark Fishery (SESSF)	✓	✓	✓	✓	✓	✓	✓	✓	
SESSF Trawl Sector	✓f	✓f	✓f	✓f	✓f	✓f			
SESSF Scalefish Hook Fishery (SSCK)		✓f	✓f	✓f	✓f				
SESSF Shark Hook and Gillnet Sector	✓f	✓f	✓f	✓f	✓f				
SESSF Trap Sector	✓f	✓f	✓f	✓f	✓f				
Southern Squid Jig Fishery (SSJF)	✓f	✓f	✓f	✓	✓f	✓	✓	✓	
Western Skipjack Fishery				✓	✓				
Western Tuna and Billfish Fishery (WTBF)	✓			✓	✓				

✓Management area overlapping Environmental Sector
f Fishing effort recorded within 2016-2023 CAES data

5.1.1.1 Bass Strait Central Zone Scallop Fishery

The Bass Strait Central Zone Scallop Fishery (BSCZSF) operates in the Bass Strait north of Tasmania and extends from the Victoria/NSW border, around southern Australia to the Victoria /South Australia border (Figure 5-2). The fishing season is typically July to 31 December (AFMA, 2023a); and the target species is Commercial Scallop (*Pecten fumatus).* Scallop spawning occurs from winter to spring (June to November); however, the timing is dependent on environmental conditions such as wind and water temperature (Sause et al., 1987). Fishing method is via scallop dredge. Fishery can operate down to 120 m water depth but prefers water depth of 70-80 m.

In 2022, fishing was permitted throughout the area of the fishery, except in 4 scallop beds that were closed under the BSCZSF harvest strategy. Fishing in 2023 was concentrated primarily on beds in the eastern Bass Strait.

The fishery has a history of boom and bust, with the catch peaks (1982 to 1983, 1994 to 1996, 2003 and 2018) generally becoming progressively smaller with time. The number of active vessels has declined over the past decades, from 103 during the period 1994 to 9 vessels during 2023 fishing season. Fishing efforts vary from 4,704 dredge-hours in 2021 fishing season to 2,603 dredge-hours in 2023 season, largely due to the reopening of Tasmanian waters to scallop fishing.

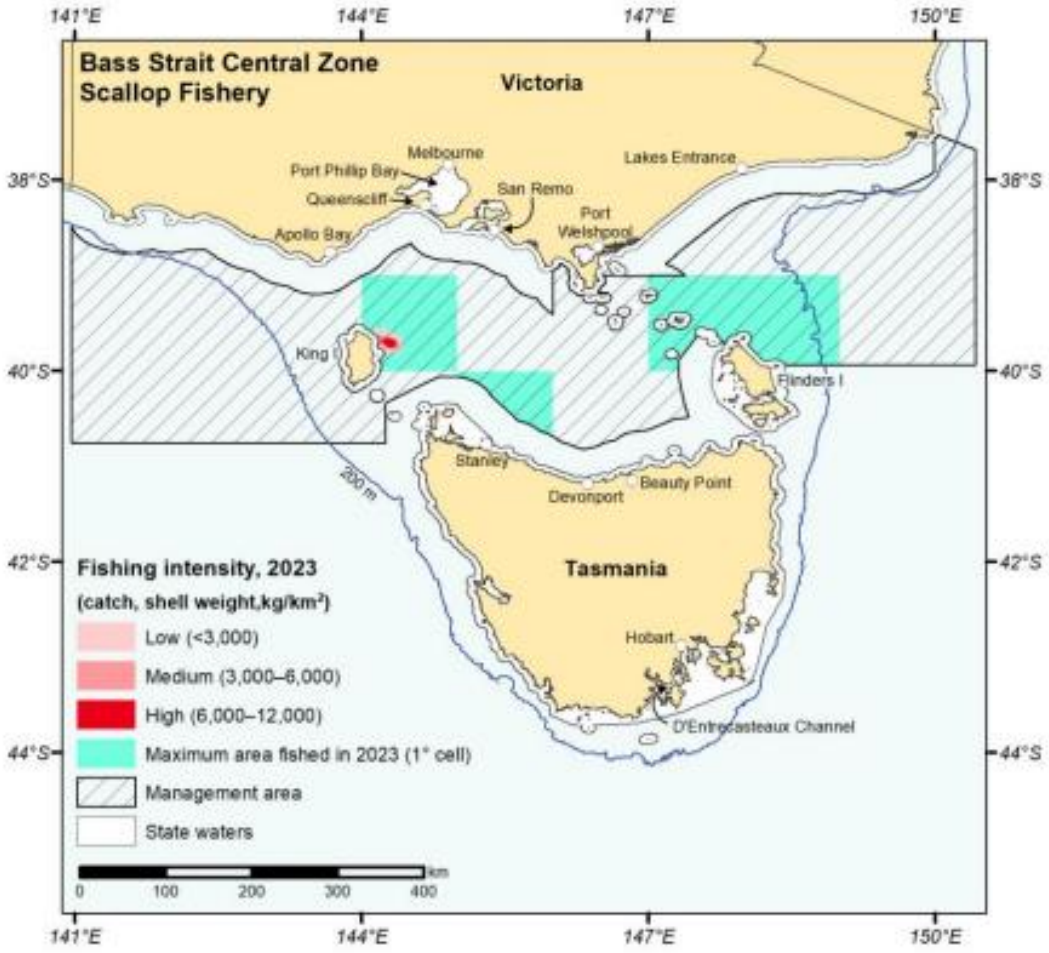


Figure 5-2: Bass Strait Central Zone Scallop Fishery Management Area Relative Fishing Intensity (Source: Butler, et al., 2024)

5.1.1.2 Coral Sea Fishery

The Coral Sea Fishery (CSF) operates in Commonwealth waters extending from Sandy Cape to Cape York in Queensland (Figure 5-3). It is bounded on the east by the Australian Fishing Zone and on the west by a boundary line 10 to 100 nm east of the boundary of the Great Barrier Reef Marine Park (Butler, et al., 2024). The Coral Sea Fishery is a multi-species fishery, targeting a variety of fish, sea cucumbers and crustaceans. The target species include:

- Black teatfish (Holothuria whitmaei)
- Prickly redfish (Thelenota ananas)
- Surf redfish (Actinapyga mauritiana)
- White teatfish (Actinapyga mauritiana)
- Other sea cucumber species (~11 species)
- Greenfish (Stichopus chloronotus)
- Aquarium Sector (>500 species)
- Lobster and Trochus Sector
- Line Sector (numerous finfish and shark species).

There is a 12-month fishing season, commencing on 1 July (AFMA, 2023b). Fishing methods include hand collection (includes barbless hooks and line, scoop, cast and seine nets), demersal line, dropline, mechanised handline, rod and reel, and trotline (Patterson, et al., 2022). The number of active vessels has increased from 2 vessels during the 2020-21 to 4 vessels during 2022-2023 fishing season. Approximately 6.4 t of fish products (excluding the Aquarium Sector, where catch is recorded as the number of individuals) was taken in the Coral Sea Fishery during the 2022-2023 season, representing an increase from the 2.9 t taken in the 2021-2022 season (Butler, et al., 2024).

During 2022-2023 season, fishing was concentrated in two areas offshore of southern and eastern Queensland (Figure 5-3).

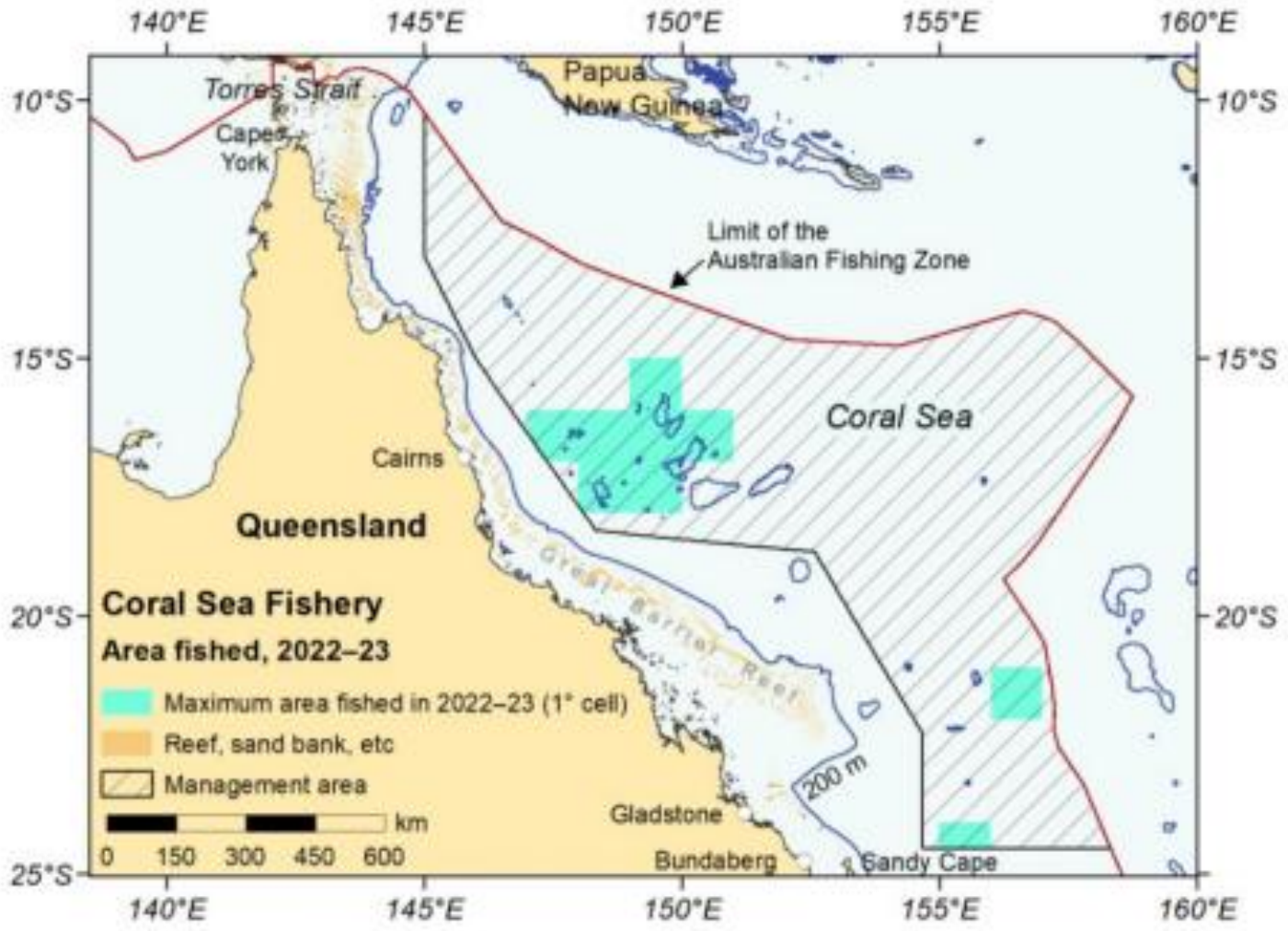


Figure 5-3: Coral Sea Fishery Management Area and 2021-2022 Relative Fishing Intensity (Source: Butler, et al., 2024)

5.1.1.3 Skipjack Tuna Fishery

Two stocks of skipjack tuna (*Katsuwonus pelamis*) are thought to exist in Australian waters, one on the east coast part of the broader Pacific Ocean stock and one on the west coast part of the Indian Ocean stock. There has been no fishing effort in the Skipjack Tuna Fishery (STF) since the 2008-2009 fishing season, due to availability of target species and prices received for the product (Butler, et al., 2024). The management area for the STF covers the entire sea area around Australia to 200 nm offshore; and is split into two sub-fisheries: eastern and western (Figure 5-5). Primary target species were Skipjack Tuna (*Katsuwonus pelamis*).

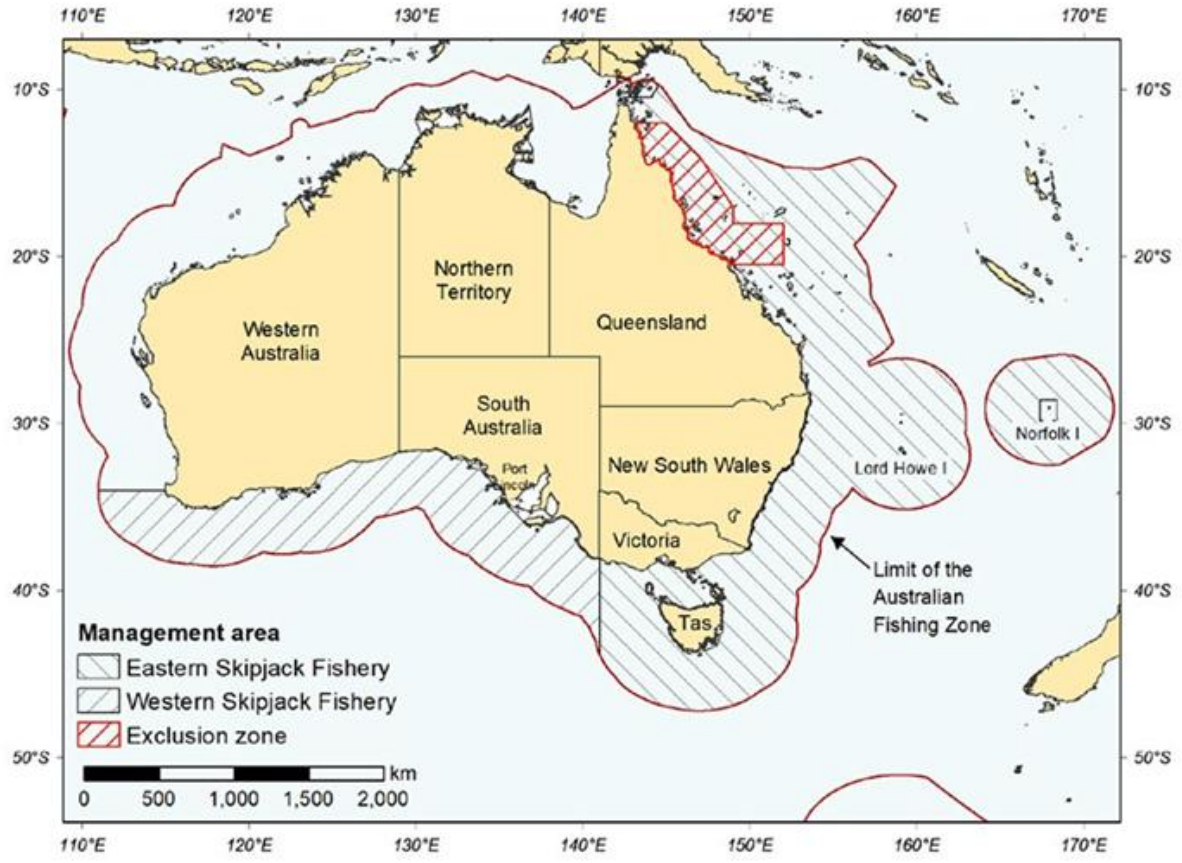


Figure 5-4: Skipjack Tuna Fishery Management Area (Source: Butler, et al., 2024)

5.1.1.4 Eastern Tuna and Billfish Fishery

The Eastern Tuna and Billfish Fishery operates in the Exclusive Economic Zone and adjacent high seas, from Cape York (Queensland) to the Victoria – South Australia border, including waters around Tasmania and the high seas of the Pacific Ocean (Figure 5-5). This fishery excludes the Southern Bluefin Tuna Fishery. Primary target species are:

- Albacore Tuna (*Thunnus alulunga*)
- Bigeye Tuna (*Thunnus obesus*)
- Yellowfin Tuna (*Thunnus albacares*)
- Broadbill Swordfish (*Xiphias gladius*)

- Striped Marlin (*Tetrapturus audux*).

There is a 12-month fishing season, commencing on 1 January (AFMA, 2023c). Fishing methods include pelagic longline, and minor line (trolling, rod and reel, handline). Most of the catch in the fishery was taken with pelagic longlines (7.26 million hooks in 2023), although a small quantity was taken using minor-line methods (502 lines in 2023). The number of active vessels has been steady during 2022 and 2023 season, with a total of 46 vessels engaged in both longline and minor line fishing methods. Fishing efforts recorded at 4,040 t in the 2023 season.

As of June 2025, there are 36 active longline vessels operating in the Eastern Tuna and Billfish Fishery (ETBF), with fishing activity extending from Cairns to the east and west coasts of Tasmania. Recent developments include new entrants to the fishery, such as a venture establishing longline operations out of Portland, Victoria, and the conversion of two purse seine vessels to the longline method for seasonal fishing from Port Lincoln, South Australia. Larger vessels are known to transit and fish through Victorian waters on their way to southern New South Wales grounds early in the southern bluefin tuna season. As of June 2025, the ETBF includes 79 Longline Statutory Fishing Rights (SFR) holders and 83 Minor Line SFR holders, providing the potential capacity for up to 162 vessels. The eastern sector of the Australian Skipjack Fishery remains inactive, with 17 permits issued but no commercial catch currently allocated (Tuna Australia, pers. comm., 20 June 2025).

During 2023, fishing was concentrated offshore of New South Wales and southern/central Queensland coasts (Figure 5-5).

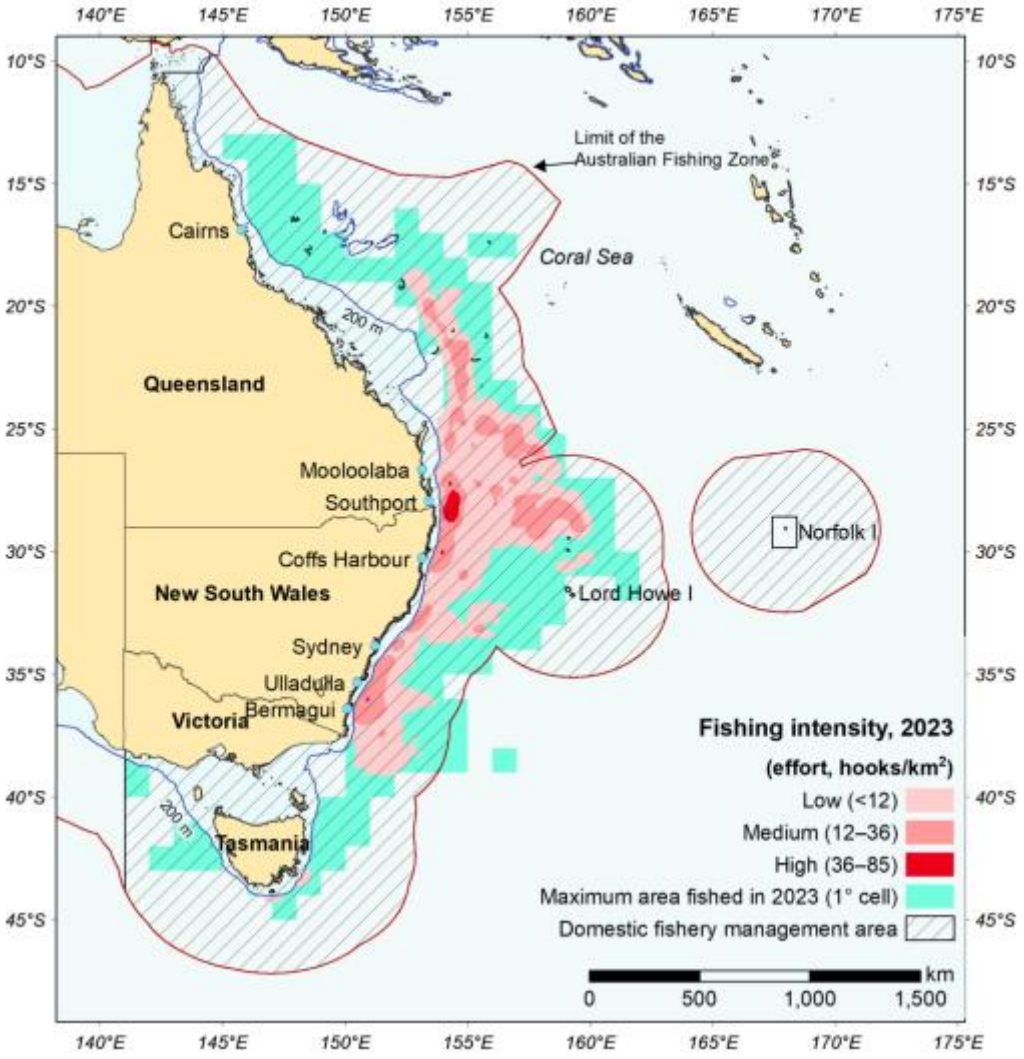


Figure 5-5: Eastern Tuna and Billfish Fishery Management Area and 2023 Relative Fishing Intensity (Source: Butler, et al., 2024)

5.1.1.5 Norfolk Island Fishery

The Norfolk Island Fishery consists of an inshore shelf/upper slope fishery and an exploratory offshore deepwater fishery.

No commercial fishing permits currently exist in the inshore waters adjacent to Norfolk Island although fishing is undertaken by residents of Norfolk Island (AFMA, 2023d).

Norfolk Island Offshore Demersal Finfish Fishery - The Norfolk Island Offshore Demersal Finfish Fishery extends 200 nm from Norfolk Island, excluding the area of the Norfolk Island Inshore Fishery and abuts the New Caledonian EEZ in the north and New Zealand EEZ in the south.

Norfolk Island Inshore Fishery - The Norfolk Island Inshore Fishery covers an area of approximately 67 x 40 nm and was designed to include all shelf waters surrounding Norfolk Island (AFMA, 2023d).

The catch is dominated by redthroat emperor (*Lethrinus miniatus*), known locally as 'trumpeter' (AFMA, 2023d). Other important species include:

- Chinaman Rockcod (*Epinephelus rivulatus*, 5-10%)

- Amberjack (*Seriola dumerili*, 1-5%; first recorded as being captured on the island in 1980)
- Cook's Scorpionfish (*Scorpaena cookii*)
- Queensland Groper (*Promicrops lanceolatus*)
- Western Pigfish (*Bodianus vulpinus*)
- Giant Trevally (*Caranx ignobilis*).

Species composition was reported to change only slightly with season but was always the same relative order (AFMA, 2010).

No stock assessments or biomass estimates for species taken within the inshore fisheries have been made. No stock status classifications have been given to this fishery, since there are no defined stocks for management purposes.

5.1.1.6 Southern Bluefin Tuna Fishery

The Southern Bluefin Tuna Fishery covers the entire Australian Fishing Zone out to 200 nm from the coast (AFMA, 2023e). Southern bluefin tuna are an important seasonal longline target species in southern Australian waters, with catch quotas regionally managed by the Commission for the Conservation of Southern Bluefin Tuna. Australia's total allowable catch allocation reserves 5% for recreational fishing, with the remainder available to the commercial sector (Tuna Australia, pers. comm., 20 June 2025). In this fishery, fish are caught in a net (purse seine) and transferred to floating pontoons, where they are raised until they are big enough to be sold. They are also fished using the pelagic longline method. (AFMA, 2023e). Southern bluefin tuna is also caught by many other countries. Australia's catch of southern bluefin tuna is a part of the total catch internationally (AFMA, 2023e). Primary target species is the Southern Bluefin Tuna (*Thunnus maccoyii*).

There is a 12-month fishing season, commencing on 1 December each year (AFMA, 2023e). The spawning ground is in Western Australia (i.e. outside of the Environmental Sectors). Longline fishing is used off the east coast of NSW, and the fishing intensity is variable (Figure 5-6). The number of vessels in the purse-seine fishery has been fairly stable, ranging from 5 to 8 since the 1994–95 fishing season, with 6 active vessels in the 2022-2023 season (Butler, et al., 2024). The number of longline vessels fishing for southern bluefin tuna off the east coast of Australia has been more variable, ranging from 11 to 24 vessels during the past 10 years (Butler, et al., 2024). The total of catch has increased from 5,972 t in 2021-2022 fishing season to 6,034 t in the 2022-2023 season.

Longline catches have increased substantially in the past five years, with the 2024 season producing a record 1,800–2,000 t following several years of approximately 1,000 t. Longline fishing effort is concentrated from the southeast coast of New South Wales across to Victoria and around both coasts of Tasmania, typically from May to October. Increasing catches earlier in the season are likely due to climate-driven shifts in migration patterns, including a strengthening of migratory routes around Tasmania via Bass Strait. This has coincided with higher recreational and minor line catches of sub-30 kg fish off northern Tasmania, which are presently below the commercial longline size range but may contribute to increased fishing effort in future. Young adult SBT are expected to be prevalent along the Victorian coastline. Increased quota availability has influenced operational strategies, with operators basing closer to fishing grounds early in the season and increasing use of Tasmanian and Victorian ports for offload and resupply, resulting in higher near-port fishing effort in Bass Strait, Tasmanian, and Victorian waters. The Otway Basin functions as a transit zone between major SBT landing ports such as Portland and Tasmanian ports. South coast NSW ports (e.g. Eden and Ulladulla) and Lakes Entrance in Victoria are also significant seasonal hubs, with Eden accommodating up to 12 longline vessels at peak and Lakes Entrance supporting a large

Commonwealth, state, and recreational fleet. Southern bluefin tuna are also harvested in the purse seine sector between December and March, targeting school fish for grow-out in ocean cages at Port Lincoln, South Australia. The availability of catch to longliners can be influenced by purse seine production, including ranching success, farm capacity, market conditions, and harvest timing, with most product exported to the Japanese market (Tuna Australia, pers. comm., 20 June 2025).

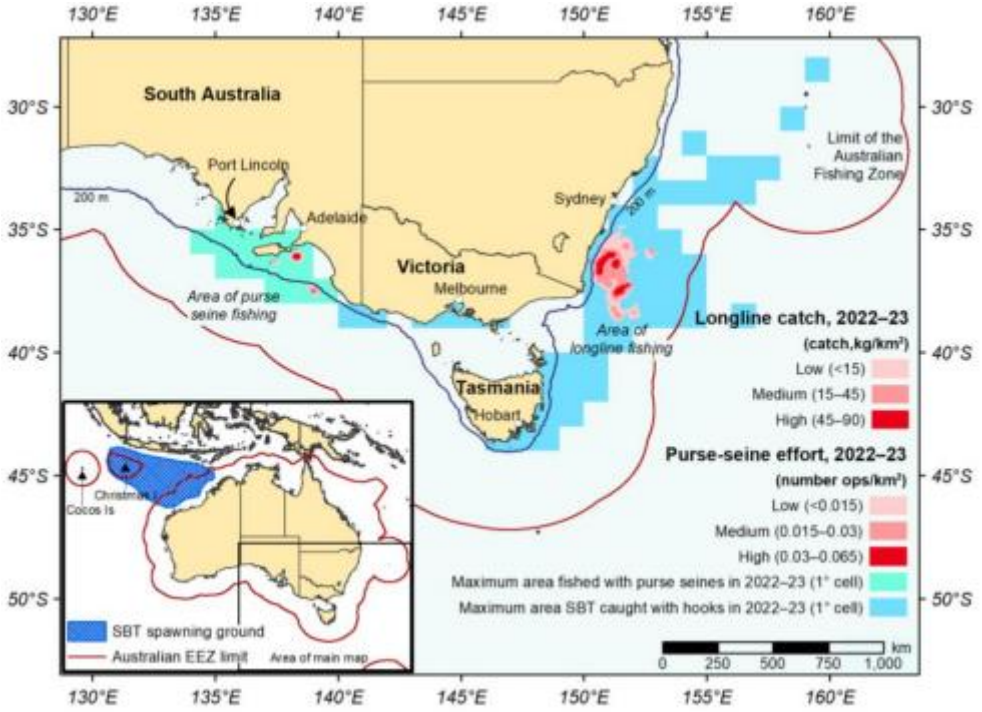


Figure 5-6: Purse-seine effort and Longline Catch in the Southern Bluefin Tuna Fishery, 2022-2023 Fishing Season (Source: Butler, et al., 20243)

5.1.1.7 Southern and Eastern Scalefish and Shark Fishery

The Southern and Eastern Scalefish and Shark Fishery (SESSF) is a multisector, multigear and multispecies fishery, targeting a variety of stocks. The SESSF stretches south from Fraser Island in southern Queensland, around Tasmania, to Cape Leeuwin in southern Western Australia (Buter, et al., 2024). Primary target species include:

- Blue grenadier (*Macruronus novaezelandiae*)
- Tiger flathead (*Neoplatycephalus richardsoni*)
- Silver warehou (*Seriolella punctata*)
- Gummy shark (*Mustelus antarcticus*)
- Pink ling (*Genypterus blacodes*)
- Eastern school whiting (*Sillago flindersi*)
- Orange roughy (*Hoplostethus atlanticus*)
- Blue-eye trevalla (*Hyperoglyphe antarctica*)
- Elephantfish (*Callorhinchus milii*)
- Sawsharks (*Pristiophorus cirratus, P.nudipinnis*)

- School shark (*Galeorhinus galeus*).

The fishery is compromised of the following sectors (Figure 5-7):

- SESSF Cth Trawl Sector (commonly referred to as the South East Trawl Fishery)
- SESSF Scalefish Hook Sector
- SESSF Shark Hook and Gillnet sector
- SESSF Trap sector.

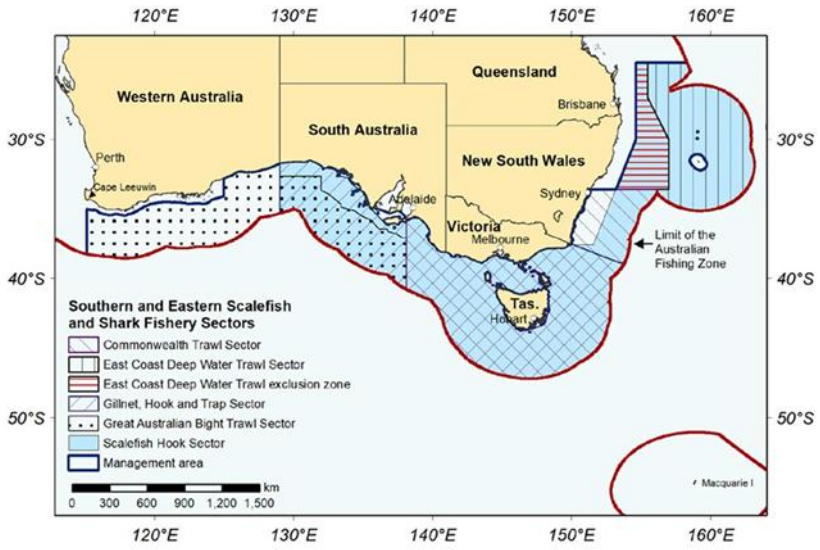


Figure 5-7: SESSF Sectors (Source: Butler, et al., 2024)

There is a 12-month fishing season, commencing 1 May (AFMA, 2023f).

The Commonwealth Trawl Sector (CTS) extends south from Barrenjoey Point in northern NSW to east of Kangaroo Island off South Australia (Figure 5-8) and the Scalefish Hook Sector (SHS) extends around south-eastern Australia to the border between South Australia and Western Australia (Figure 5-9). Effort in these fisheries is widely distributed. However, since 2007 – after the closure to trawling of most SESSF waters deeper than 700 m – effort has become increasingly concentrated on the shelf (up to 200 m) rather than on the slope (Butler, et al. 2024). The CTS predominantly uses demersal otter trawl and Danish-seine fishing methods. Pair trawling and midwater trawling methods are also permitted under the SESSF management plan but are rarely used. The SHS uses a variety of longline and dropline hook fishing methods, some of which are automated (Butler, et al., 2024).

In the 2023–24 fishing season, landings in the SESSF totalled 16,691 t, comprising 12,468 t in the CTS, 2,642 t in the Gillnet, Hook and Trap Sector (GHTS) and 1,581 t in the Great Australian Bight Trawl Sector (GABTS) (Figure 5-8). There was no catch in the East Coast Deepwater Trawl Sector (ECDTS) in the 2023–2004 fishing (Butler, et al., 2024) season.

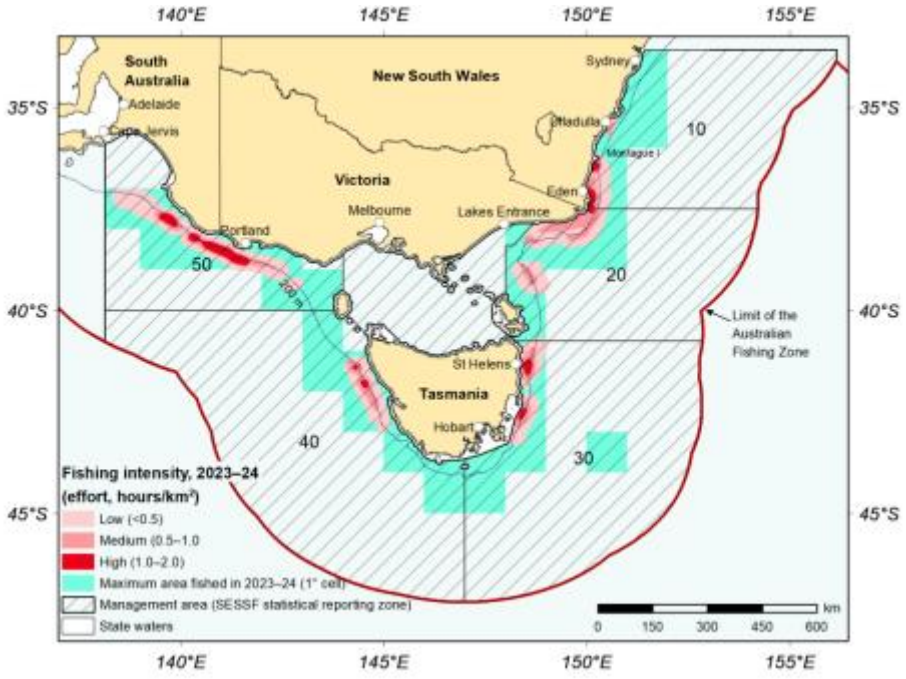


Figure 5-8: Fishing intensity in the Commonwealth Trawl and Scalefish Hook sectors (Source: Butler et al., 2024)

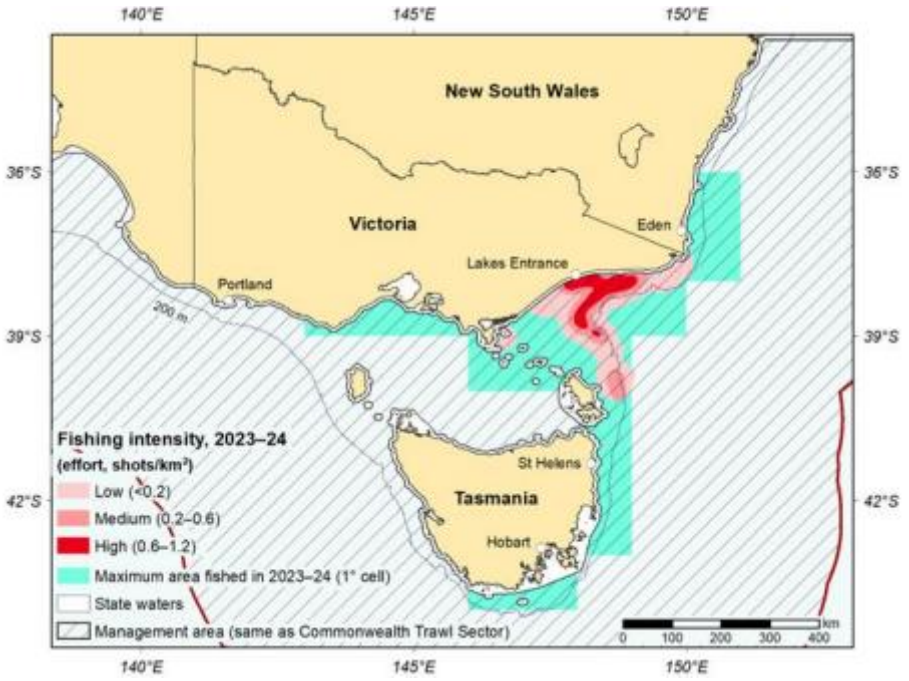


Figure 5-9: Fishing Intensity in the Commonwealth Trawl and Scalefish Hook sectors – Fishing Intensity in the Commonwealth Trawl Sector for Danish seine, 2023–24 Fishing Season (Source: Butler, et al., 2024)

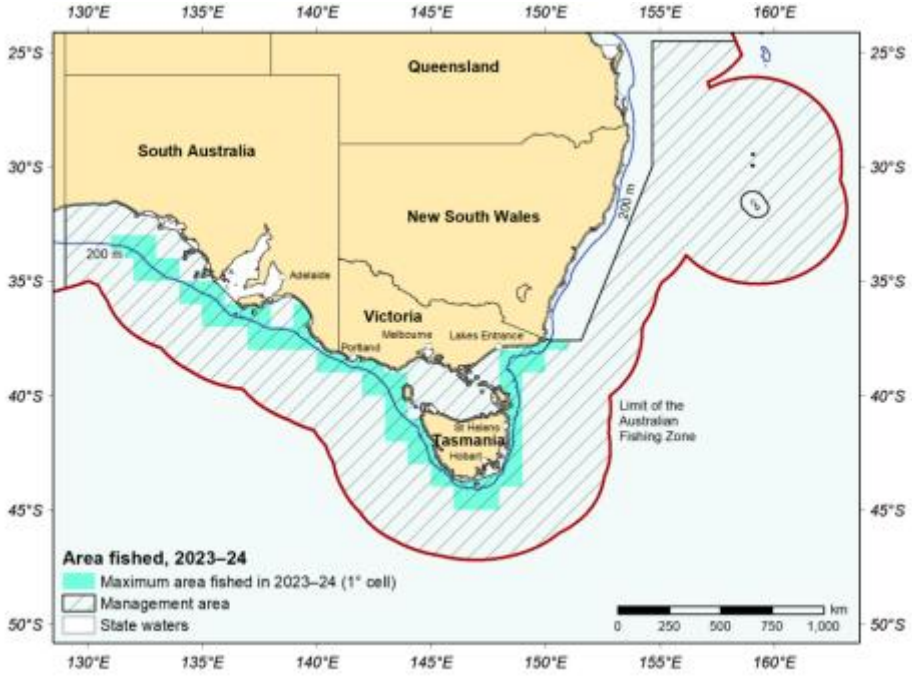


Figure 5-10: Fishing Intensity in the Commonwealth Trawl and Scalefish Hook Sectors – Maximum Area Fished in the Scalefish Hook Sector, 2023–24 Fishing Season (Source: Butler, et al., 2024)

The ECDTS is located beyond the 4,000 m isobath of the continental margin off eastern Australia (Figure 5-11). Effort in this fishery is variable. There was no effort in the fishery between the 2014–15 and 2017–18 fishing seasons, nor between the 2020–21 and 2023–24 fishing seasons (Butler et al., 2024). The ECDTS uses midwater trawl, demersal otter trawl, Danish-seine and pair trawling gears methods. (Patterson, et al., 2022).

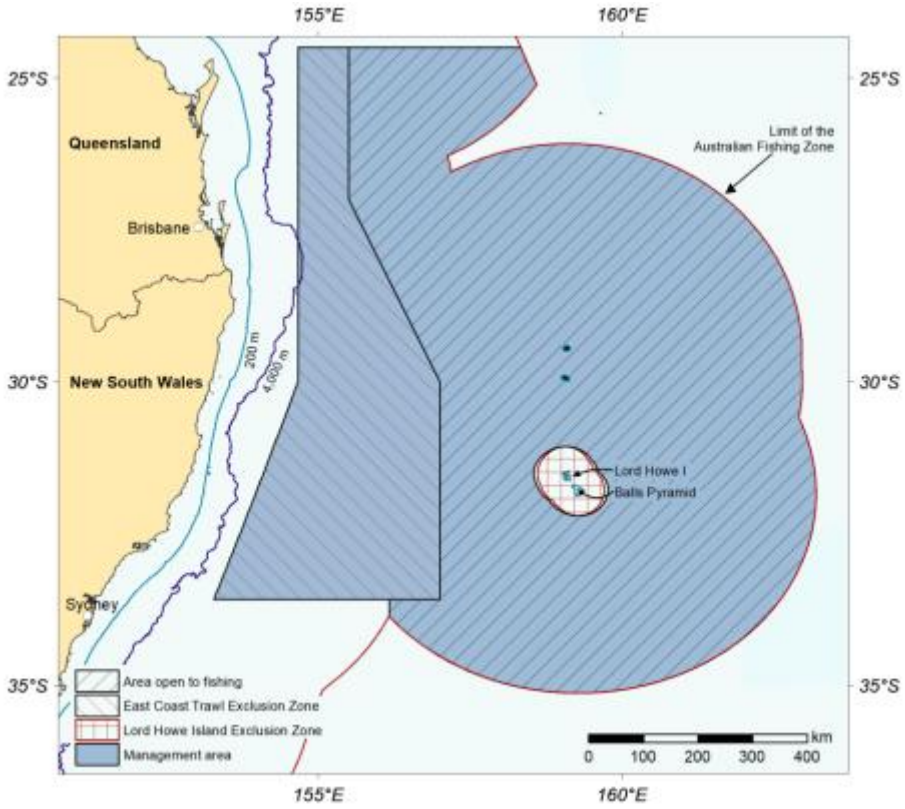


Figure 5-11: Area of the East Coast Deepwater Trawl Sector, 2023-2024 Fishing Season (Source: Butler, et al., 2024)

The Shark Gillnet and Shark Hook Sectors (SGSHS) are part of the GHTS and extend from the Victoria/NSW border, around southern Australia to the South Australia / Western Australia border (Figure 5-12). Since 2007, after the closure to trawling of most SESSF waters deeper than 700 m, effort has become increasingly concentrated on the shelf (to 200 m) rather than on the slope. Most fishing in the SGSHS using nets occurs in Bass Strait, while most fishing using hooks occurs off South Australia. Effort in the gillnet sector peaked in 1987 at 99,000 km of gillnet hauled but has decreased to around one-quarter of this level (23,635 km of gillnet was hauled in 2023–24). Hook effort in 2023–24 was 3.07 million hooks. This is an increase from around 2.34 million hooks in the 2022–23 season, and is the highest number of hooks deployed in recent history (Butler, et al., 2024).

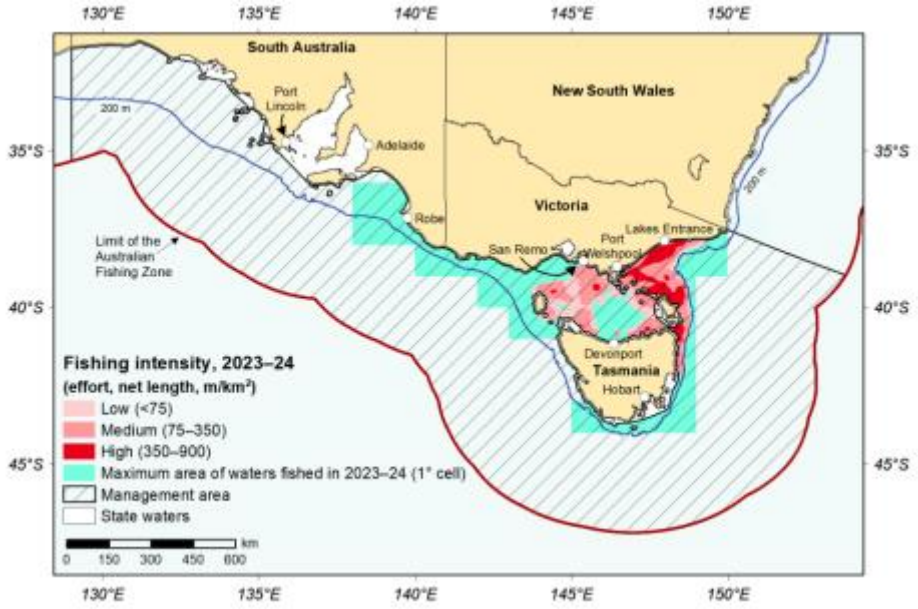


Figure 5-12: Fishing intensity in the Shark Gillnet sector of the Southern and Eastern Scalefish and Shark Fishery, 2023-2024 Fishing Season (Source: Butler, et al., 2024)

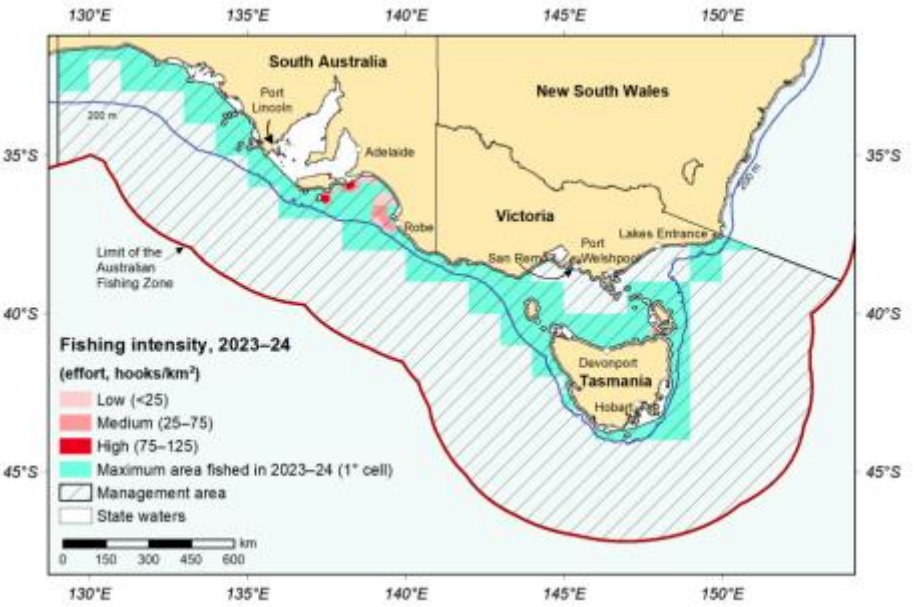


Figure 5-13: Fishing Intensity in the Shark Hook Sector of the SESSF, 2023-2024 Fishing Season (Source: Butler, et al., 2024)

The GABTS extends along the Great Australian Bight between South Australian and southern Western Australia (Figure 5-14) and is comprised of 3 distinct components:

- Continental-shelf fishery - depths less than 200 m
- Upper continental-slope fishery – depths between 200-700 m
- Deepwater fishery – depths of 700 – 1,000 m.

Fishing methods used in the GABTS are otter trawl and danish-seine. Increased effort in the fishery in 2023–24 led to an increase in catch of deepwater flathead, while bight redfish catch decreased compared with the previous season. Deepwater flathead continues to dominate catches, with 721 t landed in the 2023–24 fishing season, which was equivalent to 58% of the 2023–24 TAC (1,238 t). Landings of bight redfish in 2023–24 were 209 t, 21% of the 2023–24 TAC (959 t). Ocean jacket catch decreased from 229 t in 2022–23 to 199 t in 2023–24. There was no commercial harvest of orange roughy in 2022–23 or 2023–24. However, a research catch of 710 kg was taken under the GABTS Orange Roughy Research Plan in 2023–24 (69 t in 2022– 23) (Butler et al, 2024).

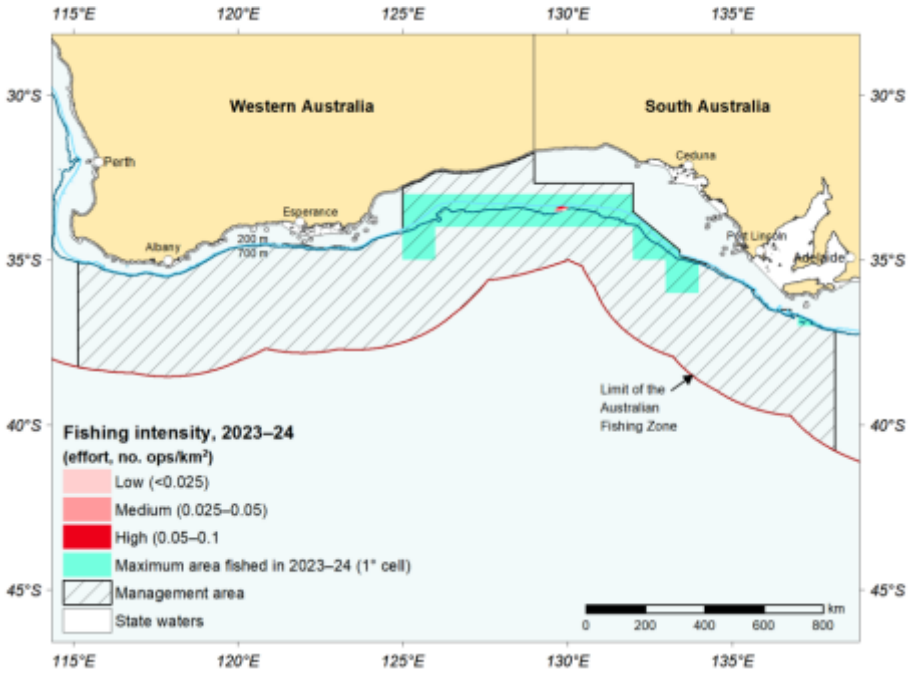


Figure 5-14: Fishing Intensity in the Great Australian Bight Trawl Sector of the SESSF, 2023-2024 Fishing Season (Source: Butler, et al., 2024)

According to research undertaken by Boag and Koopman 2021, though multiple different fisheries have rights to fish around BMG, it is only the SESSF managed fisheries that actively fish around BMG; these are:

- SESSF Commonwealth Trawl sector (Otter trawl and Danish seine)
- SESSF Shark Gillnet and Shark Hook sectors
- SESSF Scalefish Hook sector.

As reported by Boag and Koopman 2021, high levels of otter trawl effort and medium to low levels of Danish seine were reported around BMG during 2018–2019 (Figure 5-15). A total of 12 CTS Danish seine vessels fished within a 5 km radius of BMG from July 2010–June 2020, undertaking 51 shots and landing 4.7 t of fish valued at about $30,000. The main species caught was flathead (81%). A total of 13 CTS otter trawl vessels fished within a 5 km radius of BMG from July 2010–June 2020, undertaking 573 shots and landing 195 t of fish valued at about $1.09 million. Main species caught included flathead (27%), Pink Ling (19%) and Squids (9%).

Average annual catch of fish in the area (a 5km polygon surrounding BMG) equates to approximately $112,000. This is a very small amount of fish and value relative to the size of the SESSF fishery. The two largest SESSF sectors rely on the area around BMG for only 0.26% and 0.01% of their annual

catch. The BMG polygon is probably as important as any other area of that size (relatively small) to the trawl fishery.

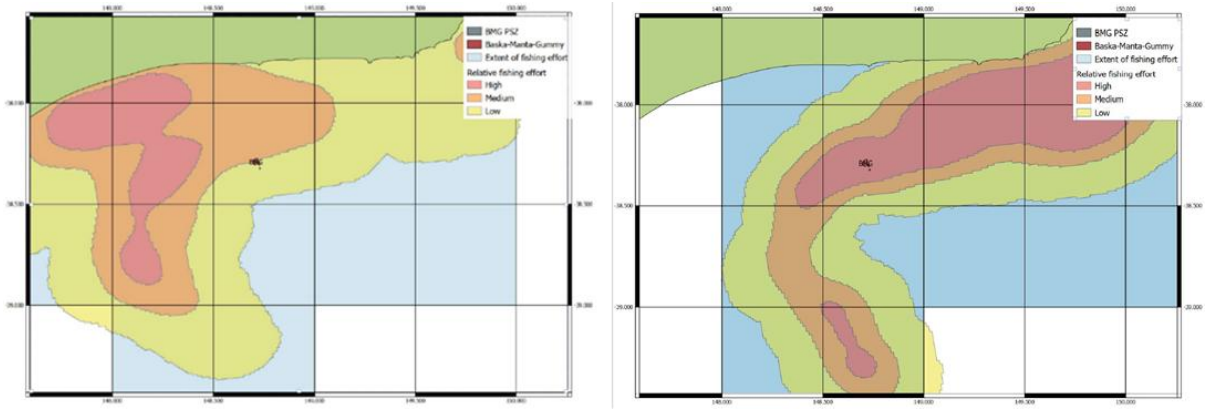


Figure 5-15: Relative Fishing Intensity and Total Area Fished by the CTS Relative to BMG (2018-2019). Left: Trawl Board Sector. Right: Danish Seine Sector. Boag and Koopman 2021.

5.1.1.8 Small Pelagic Fishery

The Small Pelagic Fishery operates in Commonwealth waters from southern Queensland to southern Western Australia (Figure 5-16). It is split into three sub-areas (east, west and sardine) for management purposes. Most historical fishing efforts has occurred off the east and south coast of Tasmania (Butler, et al., 2024). Primary target species are:

- Australian sardine (*Sardinops sagax*)
- Blue mackerel (*Scomber australasicus*)
- Jack mackerel (*Trachurus declivis, T. murphyi*)
- Redbait (*Emmelichthys nitidus*).

It is a 12-month fishing season, commencing on 1 May each year (AFMA, 2023g). Fishing methods include purse seine and midwater trawl fishing vessels (Butler, et al., 2023); midwater trawl has been the main method since 2002.

Purse-seine effort (reflected as search-hours) peaked at 1,093 search-hours in 2005–06 and declined to 45 search-hours in 2013–14. Purse-seine effort has since increased and was 307 search-hours in 2022–23 and 868 search-hours in 2023–24. Midwater trawl effort peaked at 694 shots in 2020–21 and has been variable in recent years. There were 562 midwater trawl shots in the 2023–24 fishing season.

Midwater trawling has been the primary fishing method in the SPF in more recent years and most effort now occurs off the south coast of New South Wales. Low catches in the SPF between 2010–2011 and 2014–2015 are likely to have reflected a lack of markets and fish availability near processing facilities, rather than low levels of overall abundance. Catches increased between 2014–15 and 2016–17, when a factory-freezer trawler operated in the fishery and again between 2016–17 and 2023–24 when midwater trawling effort increased. Total catch (23,230 t) was at its highest level in 2023–24, comprising mostly blue mackerel, jack mackerel and redbait (Butler, et al., 2024).

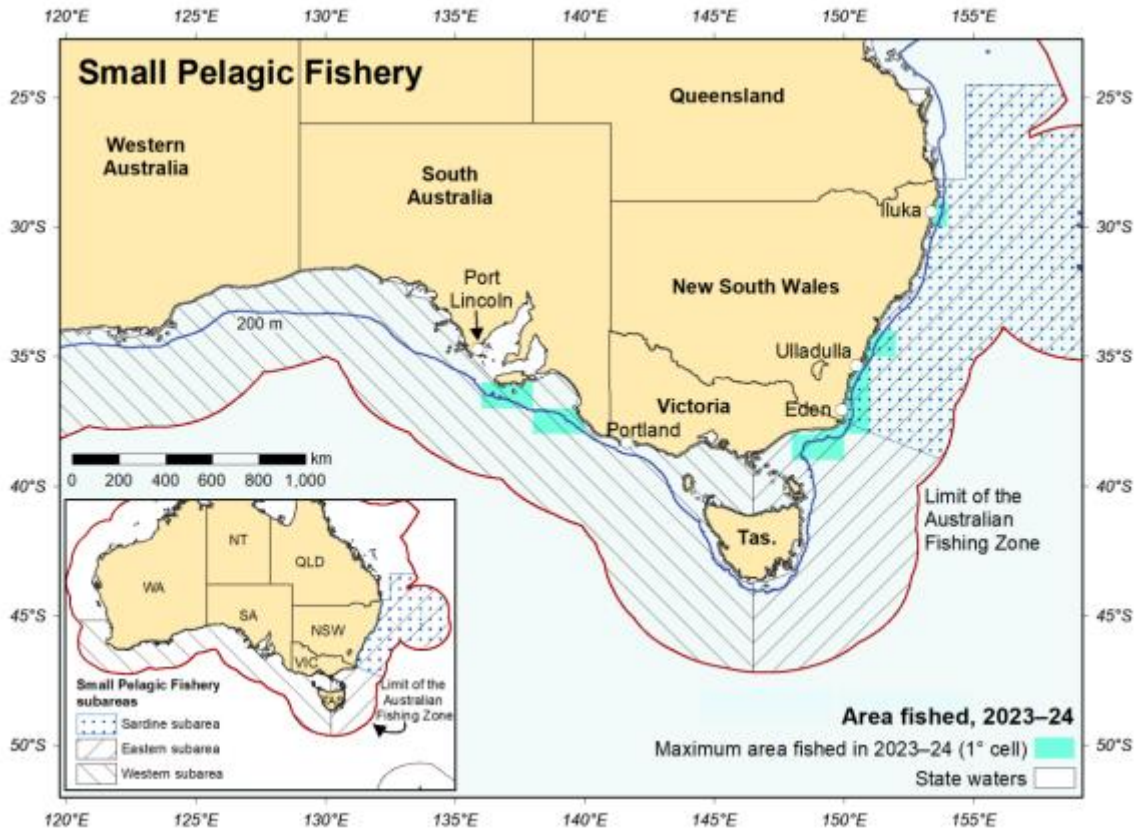


Figure 5-16: Small Pelagic Fishery Management Area and 2023-2024 Fishing Season (Source: Butler, et al., 2023)

5.1.1.9 Southern Squid Jig Fishery

The Southern Squid Jig Fishery is located in waters off NSW, Victoria, Tasmania and South Australia, and in a small area off southern Queensland (Figure 5-17) (Butler, et al., 2024). The Southern Squid Jig Fishery is a single-method (jigging) fishery, primarily targeting the Gould's squid (*Nototodarus gould*) (SETFIA, 2016). Vessels typically operate at night in continental shelf waters between 60–120 m water depth. Squid are also caught in the Commonwealth Trawl Sector and GAB Trawl Sector of the SESSF.

Gould's Squid is a short-lived species that is characterised by highly variable recruitment from year to year, resulting in a "boom and bust" fishery (SETFIA, 2016).

It has a 12-month fishing season, commencing on 1 January each year (AFMA, 2023g). Squid are caught using demersal trawl gear, and in state-managed fisheries using a variety of gears, including trawl, jigging, and hook and line (Butler, et al., 2024).

There has been a variable but increasing trend in fishing effort in the SSJF since 2014 when just 50 jig-hours were recorded. In 2023, there was a total of 4,509 jig-hours and 8 active jig vessels, an increase from 2022 when there were 1,320 jig-hours and 6 active jig vessels. In both 2022 and 2023, there were 4,800 gear SFRs (Butler, et al., 2024).

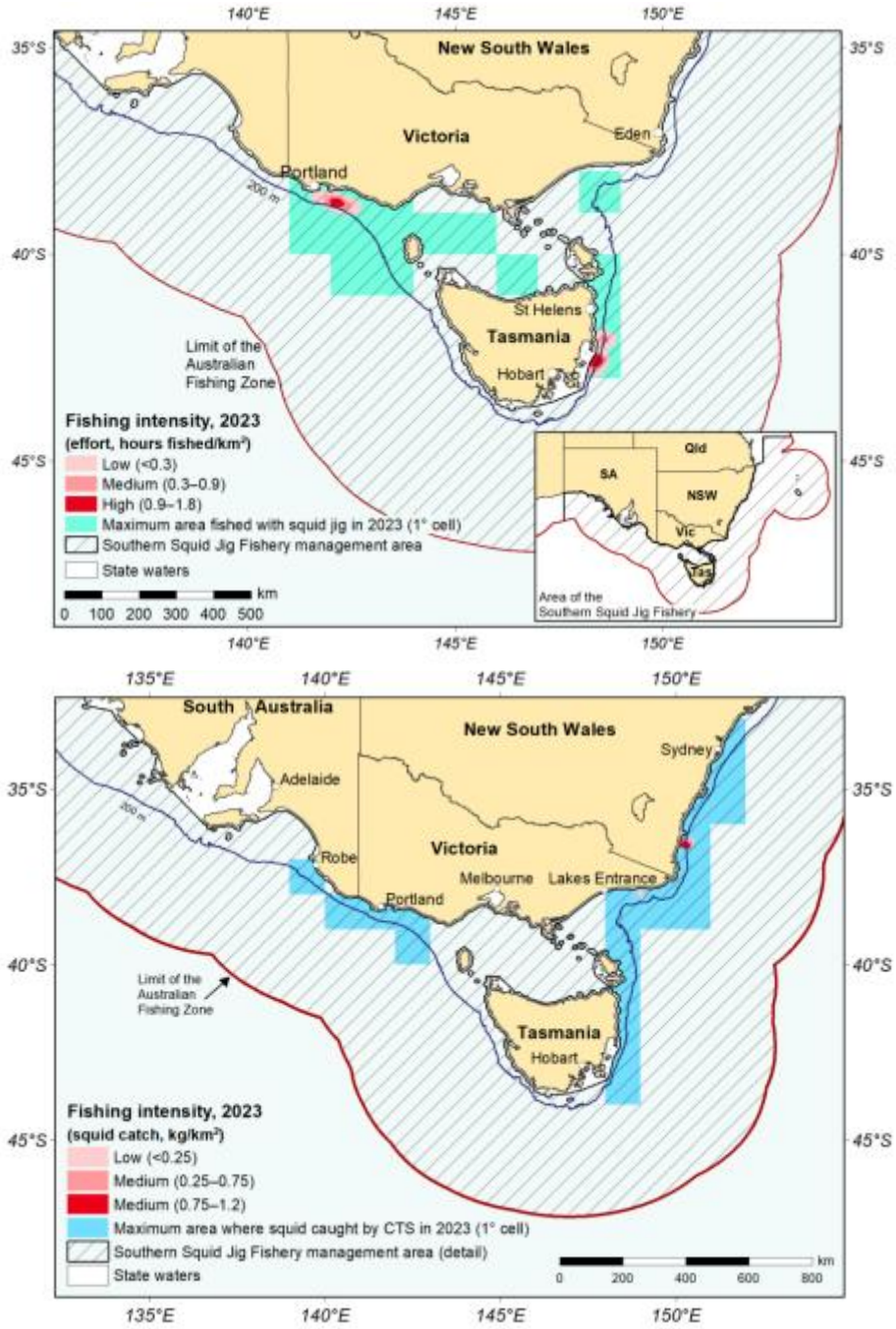


Figure 5-17: (a) Fishing Intensity in the Southern Squid Jig Fishery and (b) Commonwealth Trawl Sector Squid Catch, 2023

5.1.1.10 Western Tuna and Billfish Fishery

The Western Tuna and Billfish Fishery operates in waters extending west from the South Australia / Victoria border (Figure 5-18) It has a 12-month season, commencing 1 February each year. Primary target species include:

- Bigeye tuna (*Thunnus obesus*)
- Yellowfin tuna (*Thunnus albacares*)

- Broadbill swordfish (*Xiphias gladius*)
- Striped marlin (*Tetrapturus audux*), being a minor component of the catch.

Fishing methods in the Western Tuna and Billfish Fishery are predominantly pelagic longline, with some minor-line fishing. In recent years, fishing effort has concentrated off south-west Western Australia, with occasional activity off South Australia (Butler, et al., 2024). Since 2005, fewer than five vessels have been active in the fishery each year (Patterson, et al., 2022). In 2023, only 4 vessels were active. The total catch of the fishery has significantly decreased from 146 t in 2022 to 208 t in 2023 season (Butler et al., 2024).

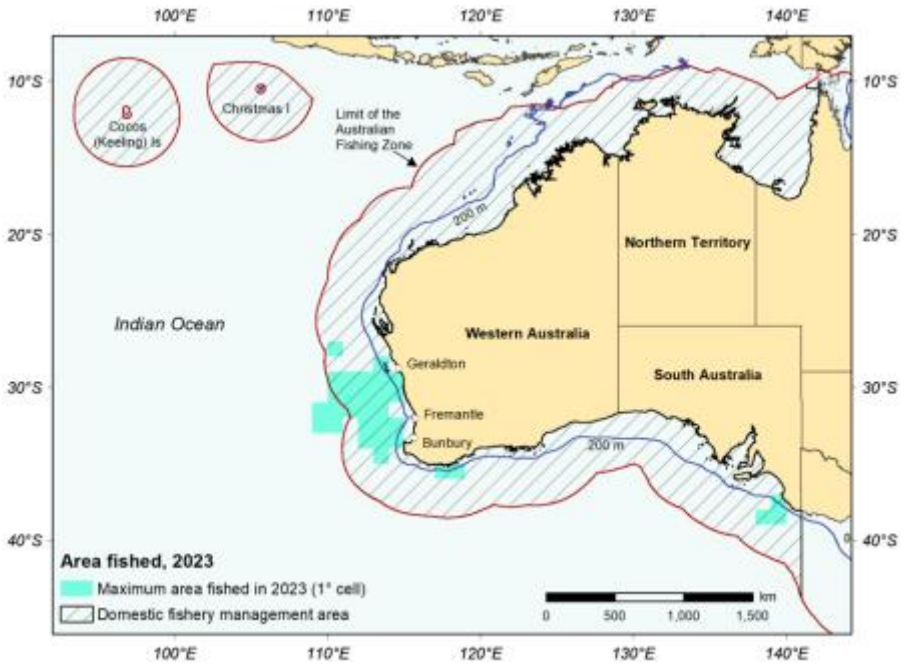


Figure 5-18: Western Tuna and Billfish Fishery Management Area and 2023 Fishing Area (Source: Butler, et al., 2024)

5.1.2 State-Managed Fisheries

The Offshore Constitutional Settlement (OCS) allows for individual fisheries to be managed under relevant State government, with fishing areas extending into both Commonwealth and State waters. In terms of state management, Tasmanian fisheries are managed under the Living Marine Resources Management Act 1995; in South Australia under the Fisheries Management Act 2007; in Victoria under the Fisheries Act 1995; in New South Wales under the Fisheries Management Act 1994, and in Queensland under the Fisheries Act 1994.

There are 40 state-managed commercial fisheries with active fishing effort recorded between 2016 - 2023 within the Environmental Sectors (Table 5-2 to Table 5-6).

5.1.2.1 South Australia State Managed Commercial Fisheries

Table 5-2: South Australia State managed Commercial Fisheries within the Environmental Sectors (PIRSA, 2025)

Fishery	Area/Description	Extends into Commonwealth Waters	Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Abalone Fishery	The commercial sector of the South Australian Abalone Fishery has been managed as three separate fishery management zones known as the Southern, Central and Western Zone Abalone fisheries (Figure 5-19). Within these fishery management zones, there are aquatic reserves, which have prohibitions and restrictions on what species can be taken, including abalone.	Yes	• Greenlip Abalone (*Haliotis laevigate*) • Blacklip Abalone (*Haliotis rubra*).	✓								
Charter Boat Fishery	The South Australian Charter Boat Fishery is a commercial platform for recreational fishing activities; as such, all catch from the fishery is regarded as recreational catch. The majority of charter boat fishing activities occur around reef, seagrass meadows, unvegetated soft bottom, sheltered beaches and tidal flats. The charter boat	No	Primary Species: • Snapper (Pagrus auratus) • King George Whiting (Sillaginodes punctatus) • Southern Bluefin Tuna (*Thunnus maccoyii*) • Nannygai (redfish, red snapper, swallowtail) (*Centroberyx gerrardi*).	✓								

Fishery	Area/Description	Extends into Commonwealth Waters	Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	fishery is managed through a licensing and registration system. The Charter Boat Fishery operates within South Australian marine waters, from the Western Australian border to the Victorian border. The South Australian marine waters are divided into marine fishing areas, which are used to distinguish harvest locations and enable spatial research and management of the fishery: West Coast; Spencer Gulf / Coffin Bay; Gulf St. Vincent / Kangaroo Island; Victor Harbor / South East; Other (offshore areas). The fishery is generally managed at a whole-of-state level with size and catch limits in place for individual species, although there are some specific management arrangements that apply to particular regions of the fishery.		Other Species: • Silver Trevally (Pseudocaranx georgianus) • Southern Garfish (Hyporhamphus melanochir) • Southern Calamari (Sepioteuthis australis).									
Marine Scalefish Fishery	The commercial Marine Scalefish Fishery is a multi-species and multi-gear fishery. There are over	Yes (only for some species)	Primary Species: • King George Whiting (*Sillaginodes punctata*)	✓								

Fishery	Area/Description	Extends into Commonwealth Waters	Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	60 species of marine scalefish taken commercially. The Marine Scalefish Fishery operates in all coastal waters of South Australia between the Western Australian and Victorian border; however, for some species the OCS extends the fishery area out to 200 nm (Figure 5-19). The fishing area includes gulfs, bays and estuaries (excluding the Coorong). The fishery provides for the commercial harvest of most commercially available aquatic resources, with the exception of southern rock lobster, prawns, abalone and freshwater fish species. The majority of catches of these primary species comes from Spencer Gulf and Gulf St Vincent		• Southern Garfish (*Hyporhamphus melanochir*) • Snapper (*Pagrus auratus*) • Southern Calamari (*Sepioteuthis australis*). Other Species: • Vongole spp. • Australian Herring • Western Australian Salmon • Yellowfin Whiting • Shark spp.									
Miscellaneous Fishery	The Miscellaneous fishery includes: species that are not in management arrangements of existing commercial fisheries specialised fisheries multiple types of fishing gear.	No	• Sea urchins • Scallop • Native oyster • Giant crab • Western Australian salmon	✓								

Fishery	Area/Description	Extends into Commonwealth Waters	Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Many of the fisheries included are low production, low value, or both. Biological information on most of the miscellaneous species is limited.		• Beachcast seagrass and macro-algae • Eyre golden perch • Welch's grunter • Barcoo grunter.									
Rock Lobster Fishery	The South Australian Rock Lobster fishery is based on the capture of Southern Rock Lobster, however other species (including giant crabs and octopus) are permitted to be landed and sold. Miscellaneous dive fishing activities are currently used to harvest sea urchins, scallops, turbo, specimen shells and native oysters. The Rock Lobster fishery is separated into a Southern Zone and Northern Zone (Figure 5-19).	Yes	• Southern Rock Lobster (*Jasus edwardsii*)	✓f								
Sardine Fishery	The Sardine Fishery is a component of the Marine Scalefish Fishery; access to the sardine fishery is provided through a licence for the Marine Scalefish Fishery with a sardine net endorsement. The area of the fishery includes all South Australian waters out to the	Yes	• Australian Sardine (*Sardinops sagax*) • Australian Anchovy (*Engraulis australis*) Take of the following are also permitted:	✓f								

Fishery	Area/Description	Extends into Commonwealth Waters	Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	200 nautical mile Australian Exclusive Economic Zone (Figure 5-19).		• Australian anchovy (*Engraulis australis*) • Maray (*Etrumeus teres*) • Blue sprat (*Spratelloides robustus*) • Sandy sprat (*Hyperlophus vittatus*).									

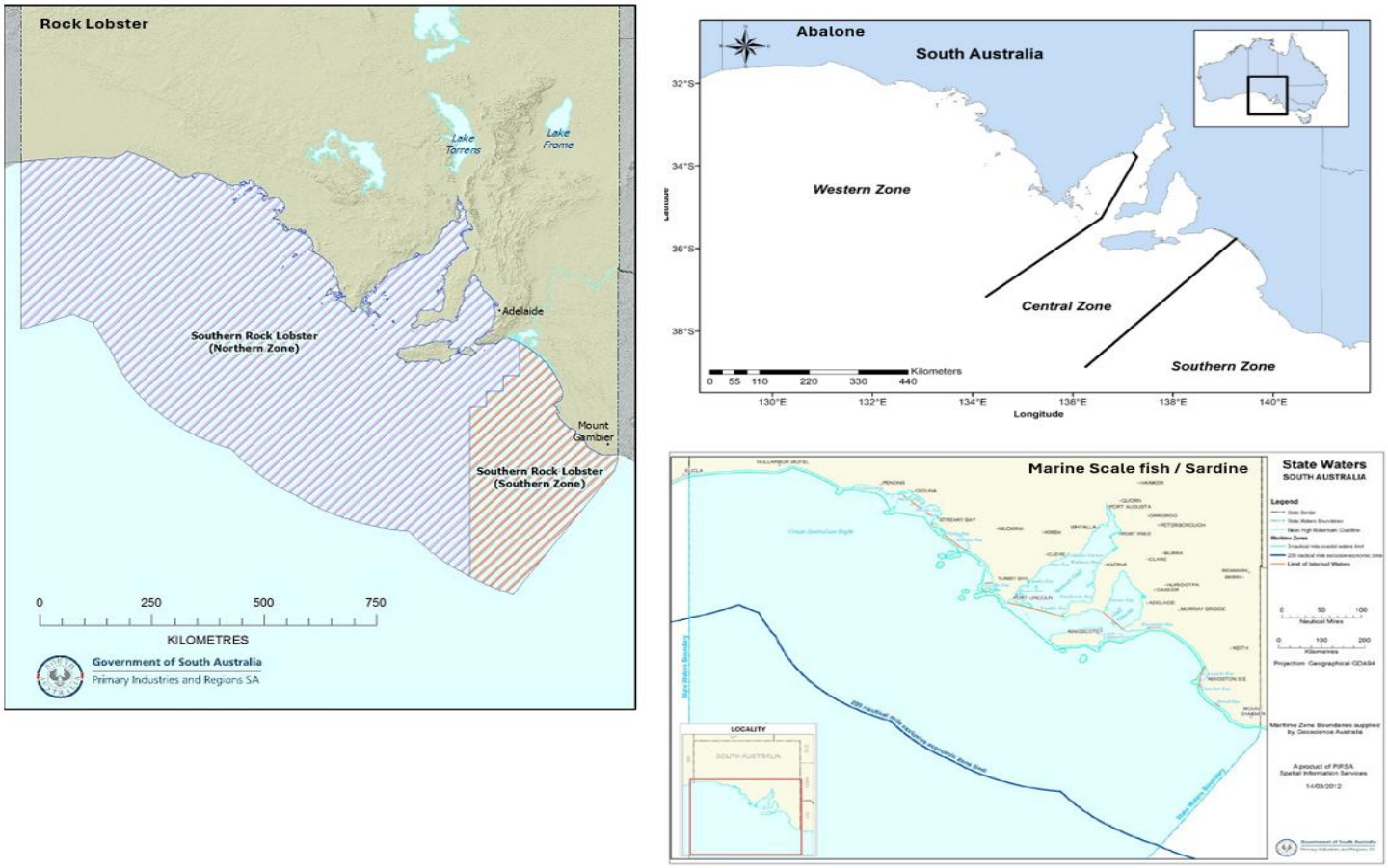


Figure 5-19: South Australian Commercial Fisheries Management Areas: Rock Lobster, Abalone, and Marine Scalefish / Sardine Fishery (Source: PIRSA 2025)

5.1.2.2 Victoria State-managed Commercial Fisheries

Table 5-3: Victoria State managed Commercial Fisheries within the Environmental Sectors (Victorian Fisheries Authority 2024)

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Abalone Fishery	Abalone are caught along the majority of the Victorian coastline. Abalone diving activity typically occurs close to the shoreline (generally up to water depths of 30 m) by divers who use an iron bar to prise it from the rocks. The divers can stay under water for long periods by using hookah gear. The fishery is quota managed, with a total allowable commercial catch set annually based on the outcomes of a stock assessment process. There are three (Western, Central and Eastern) management zones (Figure 5-20).	Yes	• Greenlip Abalone (*Haliotis laevigate*) • Blacklip Abalone (*Haliotis rubra*).	✓	✓	✓						
Sea Urchin	Sea urchins inhabit coastal subtidal reefs in 6-10m of water although *Heliocidaris erythrogramma* has been reported at water depths	No	• White sea urchin (Heliocidaris erythrogramma)	✓	✓	✓						

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	between 10-40m in the coastal waters of NSW. The Sea Urchin Fishery occurs in waters adjacent to Victoria (State coastal waters only, with exclusions). The commercial fishery is managed spatially on the basis of four separate management zones: the Eastern Zone (EZ), Port Phillip Bay Zone (PPBZ), Central Zone (CZ) and Western Zone (WZ) (Figure 5-22). Fishing season is open all year and the fishery is managed under a conservative Total Allowable Commercial Catch and divers may only collect sea urchin by hand.		• Black, long-spined sea urchin (*Centrostephanus rodgersii*).									
Eel Fishery	Eel are harvested in Victorian coastal river basins south of the Great Dividing Range. Short-finned eels are found across the State, while long-finned eels are only found in eastern Victoria (Figure 5-22).	No	• Short-finned eel (*Anguilla australis*) • Long-finned eel (*Anguilla reinhardtii*).	✓	✓	✓						

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Giant Crab Fishery	The commercial fishery has two management zones, the Western Zone (Portland, Warrnambool and Apollo Bay) and Eastern Zone (Queenscliff, San Remo and Lakes Entrance), a division which reflects the zonal boundaries of the rock lobster fishery (Figure 5-20In the Western zone, giant crabs can only be taken using commercial rock lobster pots by Western Zone rock lobster fishers. The fishery is based in the Western Zone; at the time of writing there was no giant crab fishing in the Eastern Zone. Giant crabs inhabit the continental slope at approximately 200 m depth and are most abundant along the narrow band of the shelf edge. Fishers target giant crabs using baited rock lobster pots.	Yes	• Giant crab (*Pseudocarcinus gigas*).	✓f	✓f	✓						
Octopus Fishery	Octopus Fishery commenced on 1 August 2020. The fishery is divided into 3 management zones: western, central and eastern (Figure 5-20). Octopus Fishery	Yes	• Pale octopus (*Octopus pallidus*) • Maori octopus (*Macroctopus maorum*)	✓f	✓f	✓f						

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Access Licenses authorise commercial take of octopus from the eastern octopus zone. This is where the majority of commercial octopus fishing in Victoria has occurred to date. Central and western zones are managed through exploratory and temporary permits.		• Gloomy octopus (*Octopus tetricus*).									
Multi-species Fishery	This fishery is comprised of 3 sub-sectors: Ocean fishery, Commercial Permit fishery and Octopus fishery (central and western) (Figure 5-20).	Yes	• Pale octopus (Octopus pallidus)	✓f	✓f	✓f						
Pipi Fishery	Pipi is the common name given to the small bivalve which is found on high-energy sandy beaches in the intertidal zone. The fishery covers the entire Victorian coastline, with the exception of Port Phillip Bay and Marine National Parks where shellfish cannot be harvested in the intertidal region. However, the fishery is only currently open at Discovery Bay (targeted primarily by commercial fishers) and Venus Bay (primarily a recreational	No	• Pipi (Donax deltoids)	✓f	✓f							

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	fishery)(Figure 5-22). Most of the Pipi harvest to date has been taken under Ocean Fishery Access Licences.											
Rock Lobster Fishery	The Rock Lobster fishery expands the length of the Victorian coast. The fishery is divided into two separately managed zones: Eastern and Western (Figure 5-21). The Eastern Zone extends west from the New South Wales border to Apollo Bay; the Western Zone extends from Apollo Bay west to the border with South Australia. The main ports in the Eastern Zone are Queenscliff, San Remo and Lakes Entrance. In the Western Zone, most catch is landed through Portland, Port Fairy, Warrnambool, Port Campbell and Apollo Bay. Southern Rock Lobsters are found to depths of 150 m, with most of the catch coming from inshore waters less than 100 m deep.	Yes	• Southern rock lobster (*Jasus edwardsii*)	✓f	✓f	✓f						
Scallop Fishery	The Victorian Scallop Fishery is one of three scallop zones in the Bass	Yes	Primary:	✓	✓f	✓f	✓	✓				

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Strait and extends out from the coastline to 20 nm (Figure 5-21).Historically, the majority of the fishing activity in the Victorian zone has occurred in the eastern waters of the State, with most vessels launching from the ports of Lakes Entrance and Welshpool. Scallops mature after one year but do not spawn until the second year. Adult scallops normally spawn between late winter and early spring		• Commercial scallop (*Pecten fumatus*). Other: • Doughboy scallop (*Chlamys asperrimus*).									
Ocean Wrasse Fishery	The commercial fishery extends along the entire length of the Victorian coastline and out to 20 nm offshore, except for marine parks (Figure 5-21). Most wrasse is harvested by hook and line although commercial rock lobster fishers who also hold a commercial wrasse licences can keep those fish that they catch in their rock lobster pots.	Yes	Primary targets: • Bluethroat Wrasse (*Notolabrus tetricus*) • Purple Wrasse (*N. fucicola*). Other: • Rosy Wrasse (Pseudolabrus psittaculus) • Senator Wrasse (Pictilabrus laticlavius)	✓f	✓f	✓f						

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
			• Southern Maori Wrasse (Ophthalmolepis lineolatus).									
Bays and Inlet Fisheries	Victorian bay, inlet and estuarine finfish fisheries are multi-species, multi-method fisheries. The fishery area includes Western Port, Port Phillip Bay, Corner Inlet/Nooramunga and the Gippsland Lakes.	No	Multiple species		✓	✓						

Figure 5-20: Victorian Commercial Fisheries: Abalone, Giant Crab, Multispecies, and Octopus

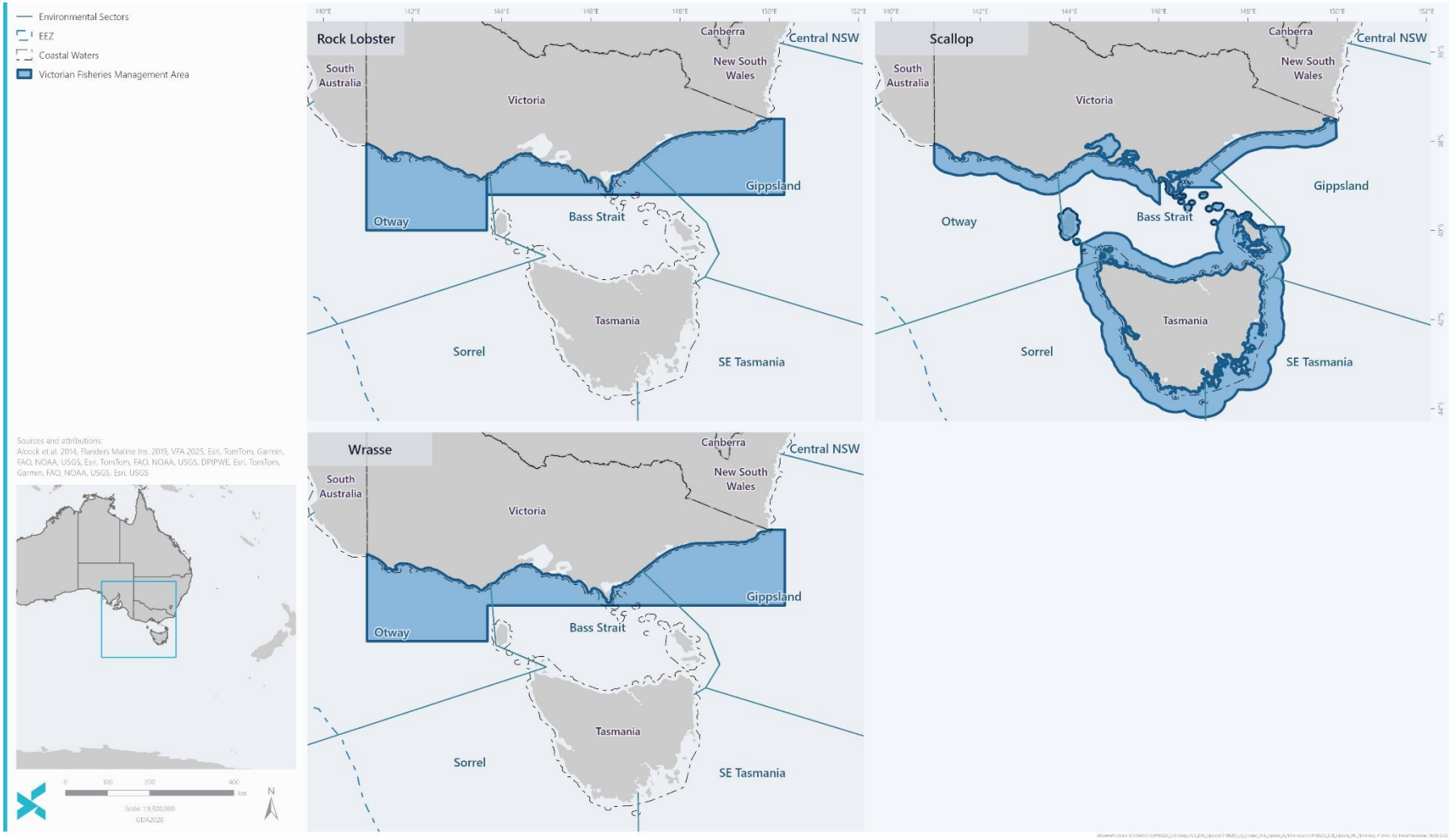


Figure 5-21: Victorian Commercial Fisheries: Rock Lobster, Scallop, and Wrasse

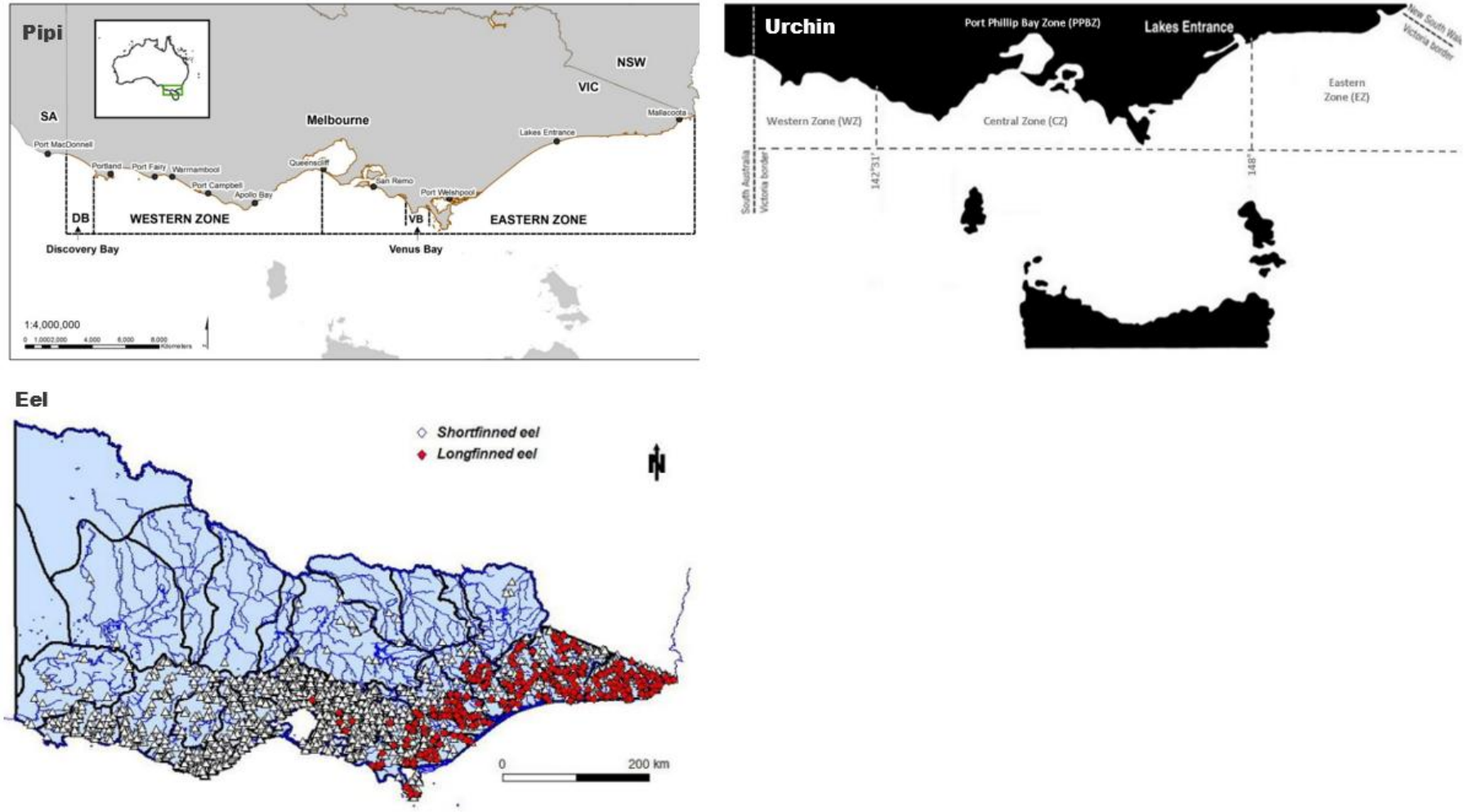


Figure 5-22: Victorian Commercial Fisheries: Pipi, Urchin, and Eel (Source: VFA 2018; 2025c; DCCEEW, 2024m)

5.1.2.3 Tasmania State Managed Commercial Fisheries

Table 5-4: Tasmania State Managed Commercial Fisheries within the Environmental Sectors (DNRET 2024)

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Abalone Fishery	The Tasmanian wild abalone industry is a major contributor to the Tasmanian economy; and is the largest wild abalone fishery in the world, providing approximately 25% of the annual harvest. The fishery is managed as zones: Northern, Bass Strait, Western and Eastern (Figure 5-23). Predominantly occur within the littoral zone from depths of 5-30 m, though they can also be found down to 40 m. Blacklip abalone are distributed around Tasmania. Greenlip abalone are found along the north coast and around the Bass Strait islands (Bradshaw, 2018).	Yes	• Greenlip Abalone (*Haliotis laevigate*) • Blacklip Abalone (*Haliotis rubra*).	✓	✓	✓f	✓f	✓f				
Commercial Dive Fishery	A number of different species are collected by the Commercial Dive Fishery. The Commercial Dive	Yes	Primary targets: • Sea Urchin (*Heliocidaris erythrogramma*)		✓		✓	✓				

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Fishery is divided into five zones: south eastern, central eastern, north eastern, northern and western. Hand collected by divers. Harvest occurs when the roe quality peaks just before spawning.		• Wavy periwinkles (*Lunella undulata*). Other: • Longspined sea urchin (Centrostephanus rodgersii)									
Giant Crab Fishery	Operates in State and Commonwealth waters surrounding Tasmania in waters south of 39° 12', and out to 200 nm from the coastline. A comparatively small fishery but is of relatively high value. The fishery has been commercially targeted since the early 1990's, changing from being open access to limited entry and is now managed by individual transferable quota. Seasonal opening: • Males – OPEN all year round. • Females – OPEN from 15 November in a year to 31 May the following year inclusive.	Yes	• Giant crab (Pseudocarcinus gigas)	✓f	✓f	✓f	✓f	✓f				

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Rock Lobster Fishery	The rock lobster fishery is a major Tasmanian industry providing significant benefits from exports from the commercial fishery. The rock lobster lives in a variety of habitats ranging from shallow rocky inshore pools out to the continental shelf. The fishery is divided into two zones, northern and southern. Season opening for the 2024 season are described below: • Female – CLOSED from Wednesday, 1 May 2024 for all State waters. • Male – CLOSED from Sunday, 1 September 2024 all waters south of St Helens Pt around to Sandy Cape (41° 29'). • Male – CLOSED from Tuesday, 1 October 2024 all other State waters.	Yes	• Southern Rock Lobster (*Jasus edwardsii*)	✓f		✓f	✓f	✓f				
Scalefish / Octopus Fishery	The Tasmanian Scalefish Fishery is a multi-species and multi-gear fishery that is predominantly made	No	Some of the species commercially targeted include:	✓	✓		✓	✓				

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	up of small owner operated commercial businesses and a large and diverse recreational fishery (Figure 5-23). The main gear types include gillnet, hooks and seine nets, other fishing gears in use include traps, Danish seine, dip nets and spears.		• Banded Morwong (*Cheilodactylus spectabilis*) • Southern Calamari (*Sepioteuthis australis*), • Octopus (*Octopus maorum*) • Tiger Flathead (*Neoplatycephalus richardsoni*), • Southern School Whiting (*Sillago flindersi*) • Southern Garfish (*Hyporhamphus melanochir*) • Wrasse (*Notolabrus sp.*), • Gould's Squid (*Nototodarus gouldi*) • Bastard Trumpeter (*Latridopsis forsteri*), • Blue Warehou (*Seriolella brama*) • Silver Warehou • Flounder (*Rhombosolea tapirine)*									

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
			• Silver Trevally (*Pseudocaranx dentex*) • Striped Trumpeter (*Latris lineata*).									
Scallop Fishery	Extends to 200 nm from the Tasmanian coast, except for Bass Strait, where its jurisdiction covers 3-20 nm offshore. The fishery is managed under the provisions of the *Living Marine Resources Management Act 1995* and Fisheries (Scallop) Rules 2011. It is primarily based on the harvest of the commercial scallop. Although commercial fishers can legally take the doughboy scallop and the queen scallop; these species have only minor commercial significance in Tasmania. Seasonal access: • OPEN – 5 July 2024 • CLOSED – 31 December 2024	No	Primary: • Commercial scallop (*Pecten fumatus*) Other: • Doughboy scallop (*Chlamys asperrimus*) • Queen scallop (Aequipecten opercularis)		✓	✓	✓	✓				
Marine Plant	Hand harvested onshore with the exception of the Undaria sp. and	No	• Bull Kelp • Undaria		✓		✓	✓				

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	may be hand collected through diving. The Marine Plant Fishery is split into 6 zones: • King Island Area • North west Area • Granville Area • Unzoned Area • Restricted Undaria Area • Undaria Area.											
Shellfish Fishery	The commercial shellfish fishery harvests shellfish either by hand, diving from small vessels or wading and includes clams in Georges Bay North (two licences), native oysters in Georges Bay (two licences), and wild Pacific oysters (no licence cap).	No	• Venerupis clams • Native oyster (*Ostrea angasi*) • Wild Pacific oysters		✓		✓	✓				

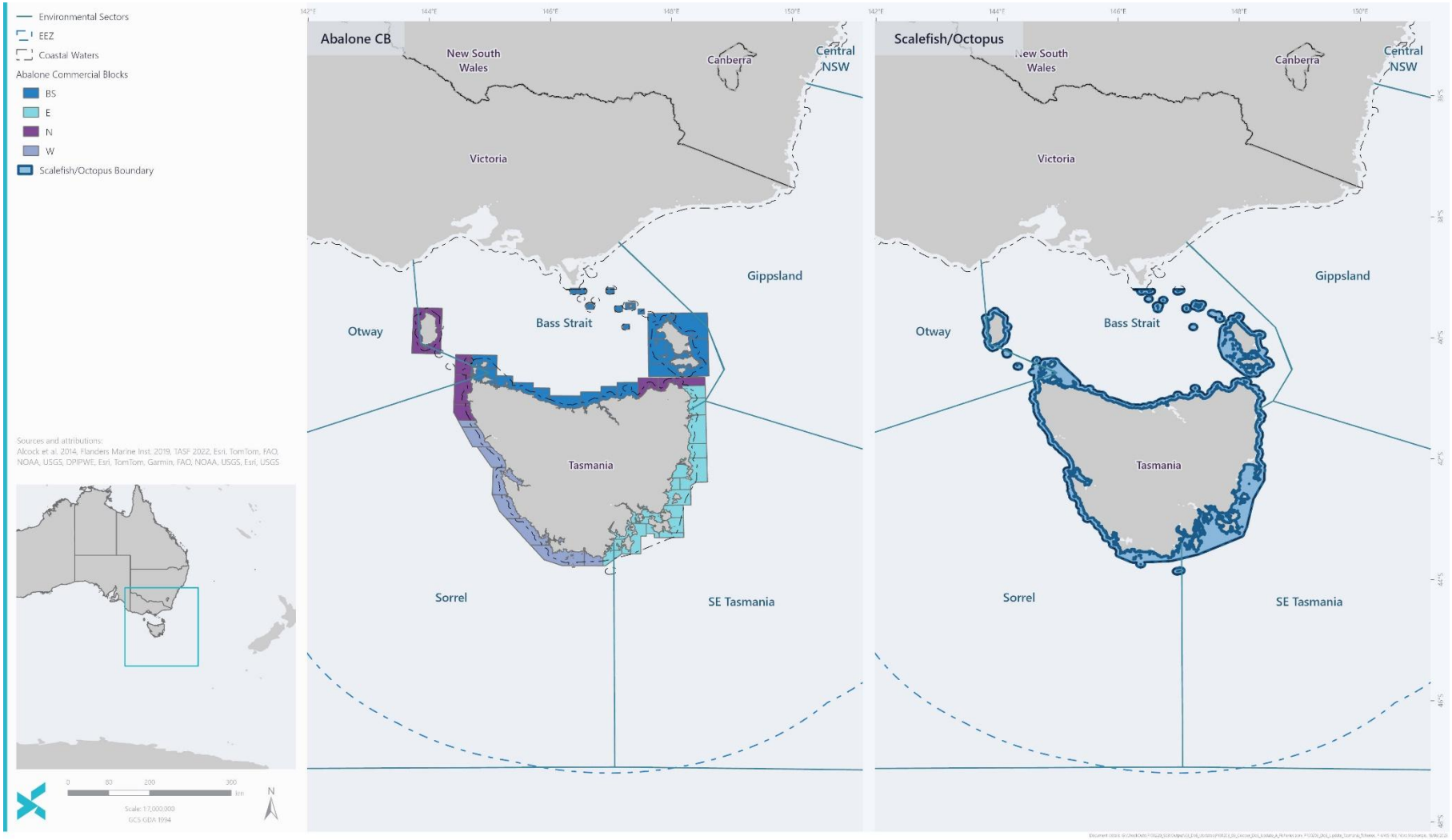


Figure 5-23: Tasmanian Commercial Fisheries: Abalone Commercial Blocks (CB) and Scalefish / Octopus Boundary

5.1.2.4 New South Wales State Managed Commercial Fisheries

Table 5-5: New South Wales State managed Commercial Fisheries within the Environmental Sectors (DPI 2025)

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Abalone Fishery	The blacklip abalone forms the basis of the abalone fishery in NSW. Abalone are commercially harvested, through hand collection, from rocky reefs by divers typically using surface-supplied air or scuba. In practice, most commercial abalone fishing takes place on the south coast of NSW, primarily from Jervis Bay to the Victorian border (Figure 5-24), with most abalone found close to the shore. Season is year-round. New size limits and endorsement conditions in force from 10 July 2018.	No	• Blacklip abalone (*Haliotis rubra*)			✓f			✓f	✓		
Estuary General Fishery	The Estuary General Fishery is a diverse multi-species multi-method fishery that may operate in 76 of the NSW's estuarine systems (Figure 5-24). This fishery is a	No	Catch includes: • Sea Mullet (*Mugil cephalus*) – 40%			✓f			✓f	✓f		

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	significant contributor to regional and state economies providing high quality seafood and bait to the community. On average, the 10 species that make up over 80% of landings by weight are those shown in the Target Species column.		• Luderick (*Girella tricuspidata*) – 8% • Yellowfin bream (*Acanthopagrus australis*) – 8% • School Prawn (*Metapenaeus macleayi*) – 5% • Blue Swimmer Crab (*Portunus pelagicus*) – 4% • Dusky Flathead (*Platycephalus fuscus*) – 4% • Sand Whiting (*Sillago ciliata*) – 3% • Pipi (*Donax deltoides*) – 3% • Mud Crab (*Scylla serrata*) – 3% • Silver Biddy (*Gerres subfasciatus*) – 2%									
Estuary Prawn Trawl Fishery	The fishery uses otter trawl nets in three estuaries in NSW, (the	No	• School Prawns (*Metapenaeus macleayi)*						✓f	✓f		

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Clarence, Hawkesbury and Hunter Rivers) (Figure 5-25). With the exception of the Hawkesbury River, the fishery operates for defined seasons (generally October to May) and within each estuary is confined to specific times and areas. The majority of prawn catches are landed during the 'dark' of the moon (between the last and first quarter), on either run out or 'slack' tides.		• Eastern King Prawns (*Melicertus plebejus)*									
Lobster Fishery	The NSW Lobster Fishery is small but valuable. The Fishery extends from the Queensland border to the Victorian border and includes all waters under jurisdiction of NSW to around 80 miles from the coast (Figure 5-25). It is characterised by inshore and offshore sectors. Inshore fishers use small beehive or square traps in waters up to 10 metres in depth,	Yes	Primary: • Eastern rock lobster (*Sagmaraisus verreauxi*) Other catch: • Southern Rock Lobster (*Jasus edwardsii*) • Tropical Rock Lobster (*Panulirus longipes* and *P. ornatus)*.			✓f			✓f	✓f		

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	whilst offshore fishers use large rectangular traps.											
Ocean Hauling Fishery	The Ocean Hauling Fishery is broken up into 7 regions along the NSW coast and targets approximately 20 finfish species using commercial hauling and purse seine nets from sea beaches and in ocean waters within 3 nm of the coast.	No	Catch includes: • Pilchards (*Sardinops sagax*) • Sea Mullet (*Mugil cephalus*) • Australian Salmon (*Arripis trutta*) • Blue Mackerel (*Scomber australasicus*) • Yellowtail Scad (*Trachurus novaezelandiae*) • Yellowfin Bream (*Acanthopagrus australis*)			✓f			✓f	✓f		
Ocean Trap & Line Fishery	The Ocean Trap and Line fishery is a multi-method, multi species fishery targeting demersal and pelagic fish along the entire NSW coast, in continental shelf and slope waters (Figure 5-26).	Yes	Primary catch: • Snapper (*Chrysophrys auratus)* • Yellowtail kingfish (*Seriola lalandi)* • Leatherjackets • Bonito (*Sarda australis)*			✓f			✓f	✓f		

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	The Ocean Trap and Line Fishery is a share management fishery. This means that commercial fishers must hold sufficient shares to be eligible for an endorsement to operate in the fishery. An endorsement authorises the use of specific gear to take fish for sale from certain waters. There are six types of Ocean Trap and Line endorsements in NSW; line fishing western zone, line fishing eastern zone, demersal fish trap, school and gummy shark, spanner crab northern zone and spanner crab southern zone.		• Silver trevally (*Pseudocaranx georgianus*) Other: • Rubberlip (grey) Morwong (N*emadactylus douglasii)* • Blue-eye Trevalla (*Hyperoglyphe antarctica)* • Sharks • Bar Cod (*Epinephelus ergastularius)* • Yellowfin Bream (*Acanthopagrus australis)* • Spanner Crabs (*Ranina ranina)*									
Ocean Trawl Fishery	The Ocean Trawl Fishery operates along the entire NSW coast and in the continental shelf and slope waters. There are two sectors to the Ocean Trawl Fishery: the prawn trawl sector and the fish trawl sector which is further split	Yes	Primary catch: • School whiting (comprising of stout whiting (*Sillago robusta*) and red spot whiting (*S.flindersi*))			✓f			✓f	✓f		

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	into the Northern Zone and Southern Fish Trawl Restricted Fishery (Figure 5-26). Both sectors use otter trawl nets. The fishery is a share management fishery; meaning commercial fishers must hold sufficient shares to be eligible for an endorsement to operate in the fishery. An endorsement authorises the use of specific gear to take fish for sale from certain waters. Many of the fishers endorsed for fish trawling are also endorsed for prawn trawling.		• Eastern King (*Melicertus plebejus*), School (*Metapenaeus macleayi*) and Royal Red prawns (*Haliporoides sibogae*) • Tiger Flathead (*Platycephalus richardsoni)* • Silver Trevally (*Pseudocaranz georgianus)* • Various species of sharks and rays, squid, octopus and bugs									
Sea Urchin & Turban Shell Restricted Fishery	The NSW Sea Urchin and Turban Shell restricted fishery is relatively small with few divers participating. The fishery operates along the entire NSW coastline and is split into 5 regions. The main constraint on development is high processing costs and limited domestic markets. Fishing for sea urchins is generally constrained to that part	No	• Black urchin (*Centrostephanus rodgersii*) • Red urchin (*Heliocidaris erythrogramma*) • Purple urchin (*Heliocidaris tuberculata*). • Sydney Turban Shell (*Turbo torquatus*)			✓f			✓f	✓		

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	of the year when the roe is well developed. A number of the fishing sub-regions have been closed to commercial fishing since 1994.		• Military Turban (*Turbo militaris*) • Green Turban Shell (*Turbo undulatus*)									
S37 Permit Fishery	A Section 37 permit (miscellaneous permit) is required for any activity that involves taking or possessing fish or marine vegetation that would otherwise be unlawful under the *Fisheries Management Act 1994.* This includes activities such as: • Science or Research Collection • Aquarium Collection • Possessing Pacific Oysters • Collecting Marine Vegetation for Commercial Purposes.	Yes	• Various			✓f			✓f			

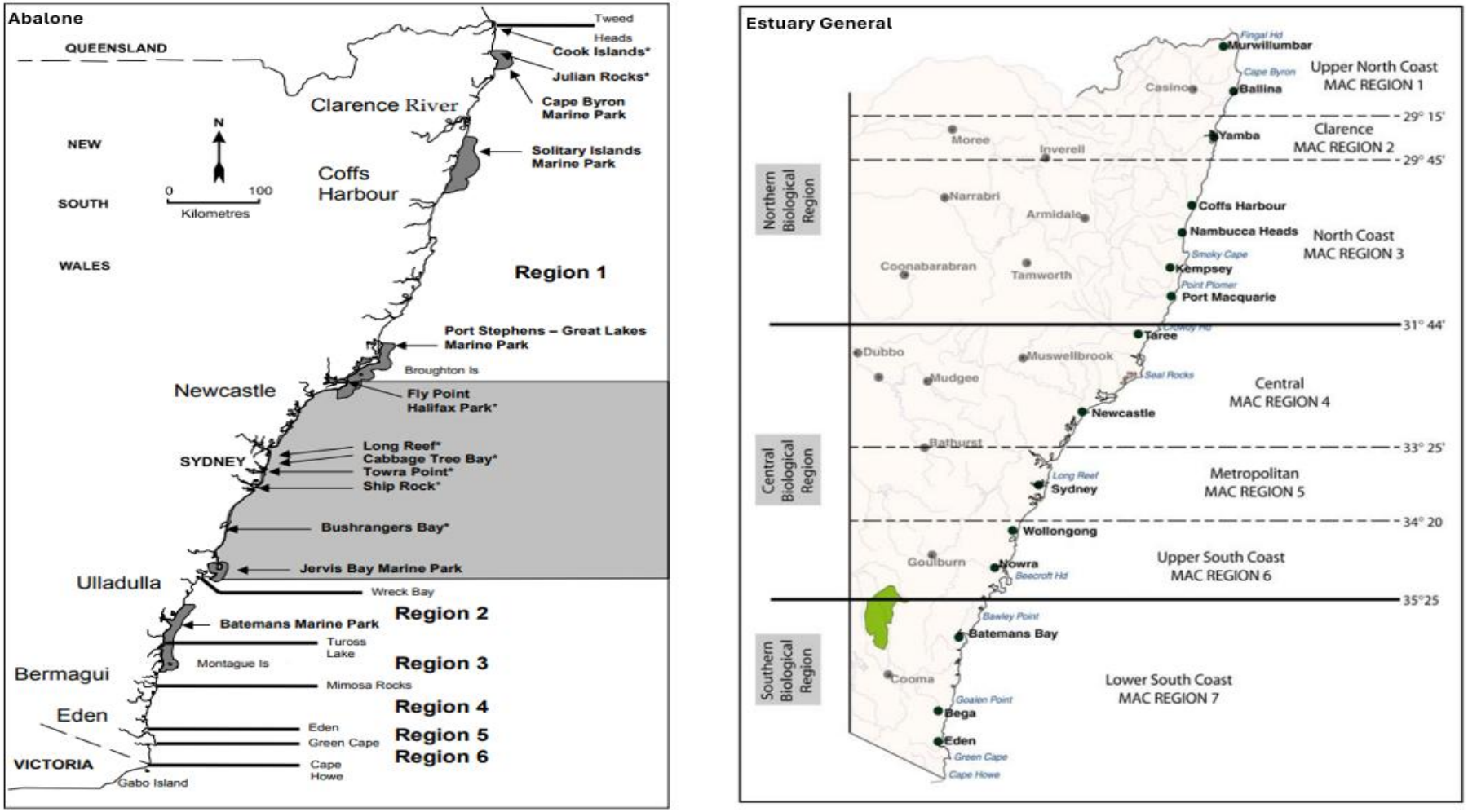


Figure 5-24: New South Wales Fisheries Management Areas: Abalone Fishery and General Estuary Fishery (Source: DPI NSW, 2025)

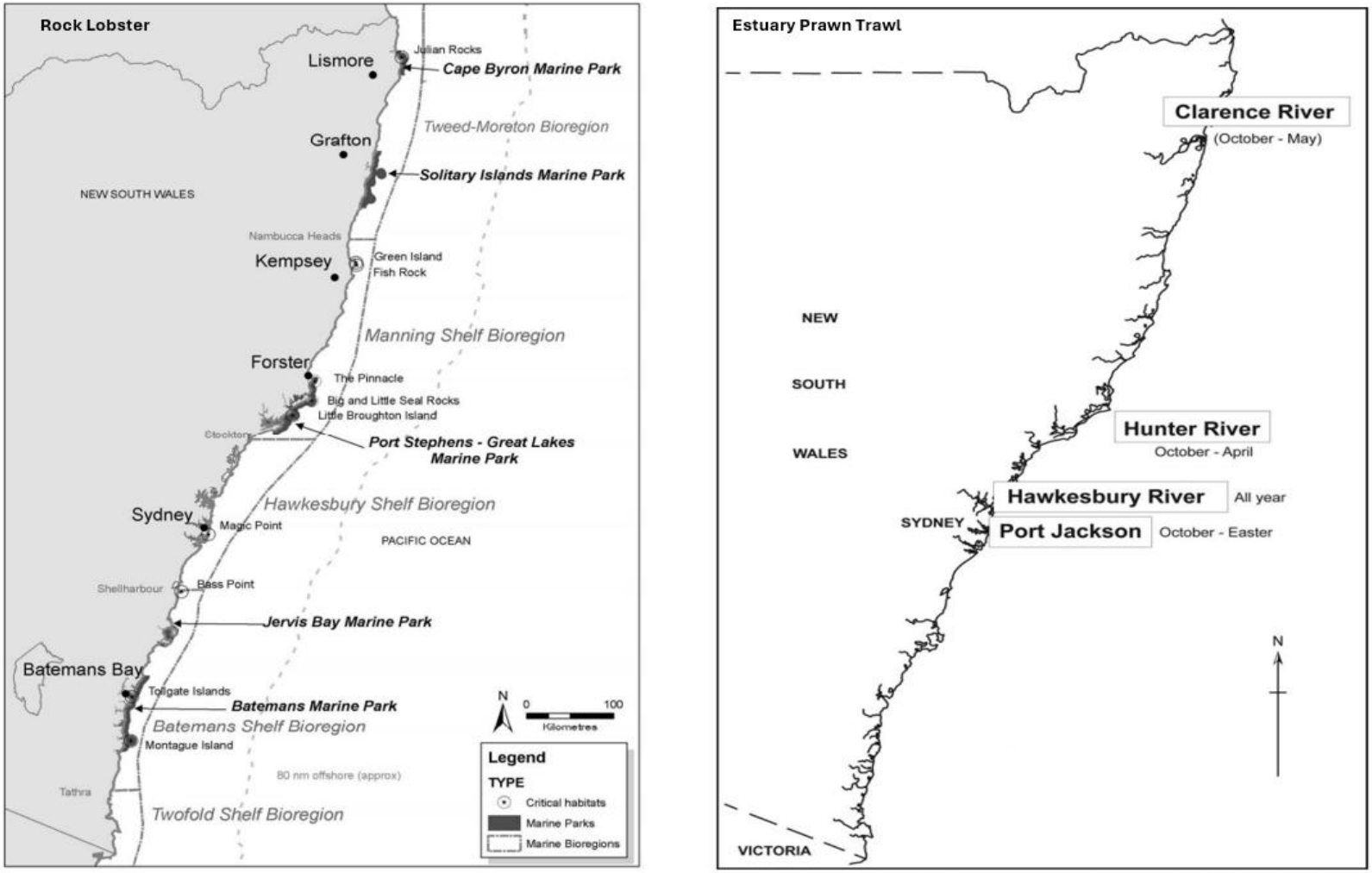


Figure 5-25: New South Wales Fisheries Management Areas: Rock Lobster Fishery and Estuary Prawn Trawl Fishery (Source: DPI NSW, 2025) _

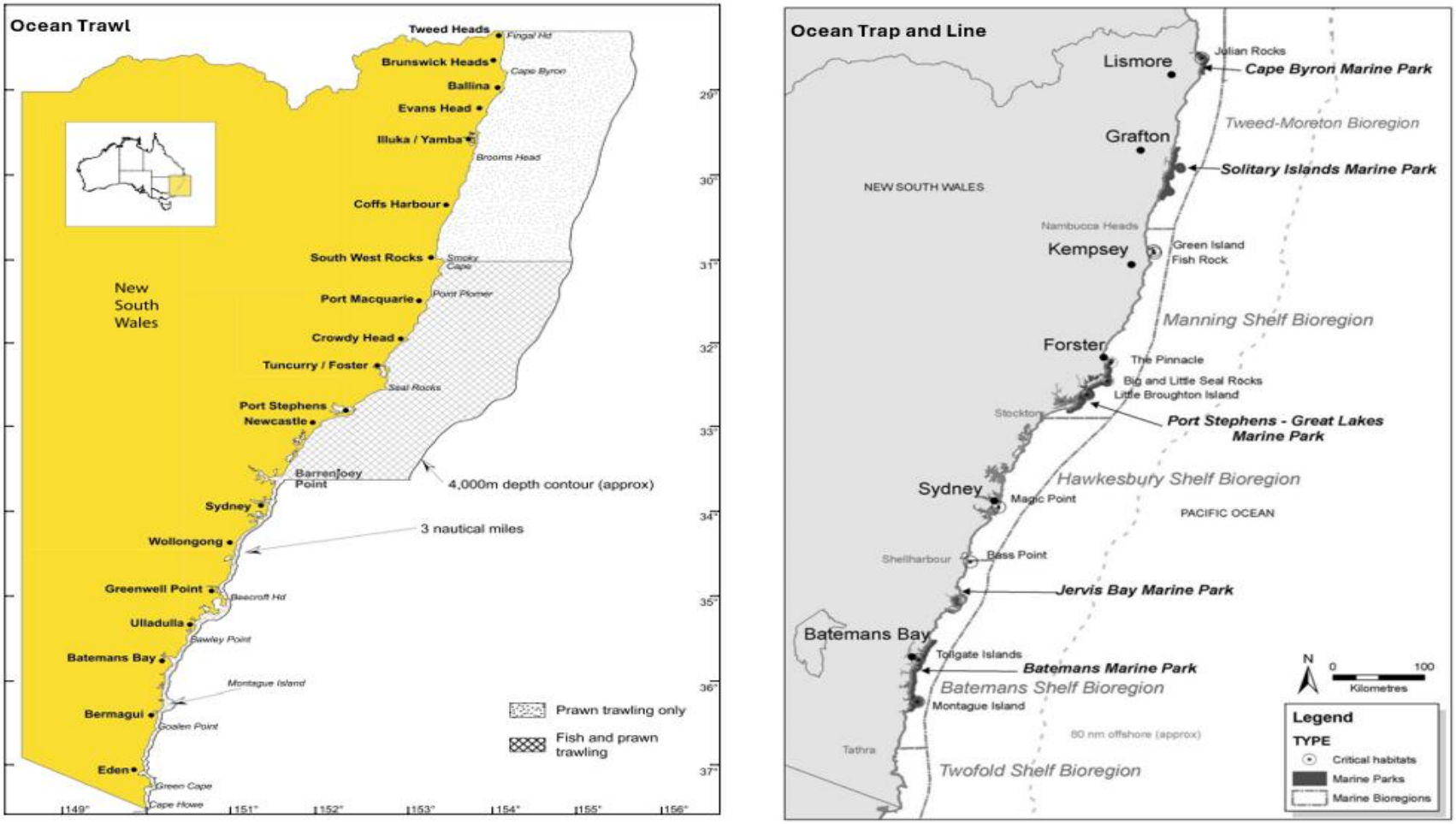


Figure 5-26: New South Wales Commercial Fisheries Management Areas: Ocean Trawl Fishery and Ocean Trap and Line Fishery (Source: DPI NSW, 2025)

5.1.2.5 Queensland State Managed Commercial Fisheries

Table 5-6: Queensland State managed Commercial Fisheries within the Environmental Sectors (Queensland Government 2025)

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Crab Fisheries	There are three fisheries (mud crab, blue swimmer crab, and spanner crab) that operated within the Queensland Crab Fishery (Figure 5-27). The fishery operates throughout the state's coastal waters, including the Gulf of Carpentaria, except for areas that are closed to fishing in general or to crabbing in particular. Fishing methods include wire-mesh or trawl-mesh crab pots, and dillies.	Yes	• Mud Crab • Blue Swimmer Crab • Spanner Crab							✓		
Eel Fisheries	The commercial eel fishery has two components: adults and juveniles. A commercial harvest fishery licence authorises fishers for both the adult and juvenile components. Commercial capture/harvest of adult eels is only permitted using baited eel traps or round traps.	Yes	• Long-finned eel (*Anguilla reinhardtii)* • Short-finned eel (*Anguilla australis*).							✓		
Harvest Fisheries	The Harvest Fishery includes the following individually managed	Yes	Sea Cucumber:							✓		

Fishery	Area/Description	Extends info Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	fisheries: sea cucumber, marine aquarium fish, coral, trochus, tropical rock lobster, and minor harvest. These fisheries are characterised by their harvesting method, which is primarily by hand or by using hand-held implements. Commercial harvesting methods often involve the use of underwater breathing apparatus, such as scuba or hookah. On a smaller scale, commercial harvest fisheries exist in Queensland for: • beachworms, bloodworms and yabbies (i.e. the 'bait fisheries') • shells, shell grit and star sand • pearl shells • wild-caught oysters.		• Blackfish (*Actinopyga palauensis*) • Burrowing Blackfish (*Actinopyga spinea*) • Sandfish (*Holothuria scabra*) • White Teatfish (*Holothuria fuscogilva*) • Prickly Redfish (*Thelenota ananas*) Marine Aquarium: • Damselfish (*family Pomacentridae*) • Butterflyfish and Bannerfish (family *Chaetodontidae*) • Angelfish (family *Pomacanthidae*) • Wrasses (family *Labridae*) • Surgeonfish (family *Acanthuridae*) • Gobies (family *Gobiidae*) Coral:									

Fishery	Area/Description	Extends info Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
			• Live corals, such as *Euphyllidae, Zoanthida, Corallimorpharia* and *Fungidae* families • Sea Anemones • Oornamental (non-living) corals, such as *Acroporidae* and *Pocilloporidae* families • Live rock (dead coral skeletons with algae and other organisms living on them) • Coral rubble (coarsely broken up coral fragments) • Coral sand (finely ground-up particles of coral skeleton) Trochus: • Giant Top Shell (*Trochus niloticus*) Tropical Rock Lobster: • Tropical Spiny Rock Lobster (*Panulirus ornatus*)									

Fishery	Area/Description	Extends into Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
			Minor Harvest: • Bait fisheries, such as beachworms, bloodworms and yabbies • Marine specimen shells • Pearl shells • Wild-caught oysters									
Line Fisheries	Line fishing is one of Queensland's main forms of commercial fishing, producing approximately 2200 t of product, valued at about $34.5 million a year. There are five-line fisheries: • Coral Reef Fin Fish Fishery • Rocky Reef Fin Fish Fishery • Pelagic Fishery • Gulf of Carpentaria Fin Fish Fishery • Deepwater Multiple-Hook Fishery. The line fisheries operate in specified tidal waters out to the Queensland OCS boundary. All five fisheries use fishing lines, with a restriction on the number of	Yes	Primary catch: • Coral Trout • Spanish Mackerel • Red-throat Emperor Other catch: • Snapper • Jobfish • Red Emperor • Nannygai • Trevally • Spotted Mackerel							✓		

Fishery	Area/Description	Extends info Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	lines and hooks that can be used. Boats used range from fleets with sophisticated equipment to small dinghies.											
Net Fisheries	Net fishing is one of Queensland's main forms of commercial fishing, producing approximately 6670 t of product valued at about $31.9 million each year. There are two commercial net fisheries: • Gulf of Carpentaria Inshore Fin Fish Fishery • East Coast Inshore Fin Fish Fishery The net fisheries are multi-species fisheries, with fishers targeting different species at different times of the year. The net fisheries operate along the entire Queensland coastline as far out as the Queensland OCS boundary.	Yes	East Coast Inshore Fin Fish Fishery (southern): • Mullet • Tailor • Whiting • Flathead • Bream • Mulloway • School Mackerel							✓		
Trawl Fishery	The trawl fishery is Queensland's largest commercial fisheries, producing up to 7800 t of product	Yes	Primary catch: • Prawns (Tiger Prawn, Endeavour Prawn, Red Spot King Prawn, Banana							✓		

Fishery	Area/Description	Extends info Commonwealth Waters	• Target Species	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	worth about $99 million each year. It has four main trawl fisheries: • East Coast Otter Trawl Fishery • Moreton Bay Otter Trawl Fishery • River and Inshore Beam Trawl Fishery • Fin Fish (Stout Whiting) Trawl Fishery. The trawl fisheries cover all tidal waters out to the Queensland East Coast OCS boundary between Cape York and the New South Wales border.		Prawn, Eastern King Prawn, Bay Prawn) • Scallops • Whiting • Moreton Bay Bugs • Squid (Pencil Squid, Tiger Squid, Arrow Squid) Other catch: • Blue Swimmer Crabs • Barking Crayfish • Cuttlefish • Mantis Shrimp • Octopuses • Pinkies • Pipefish • Red Spot Crabs • Balmain Bugs									

✓*Management area overlapping Environmental Sector*
f Fishing effort recorded with 2016 -2023 reporting period

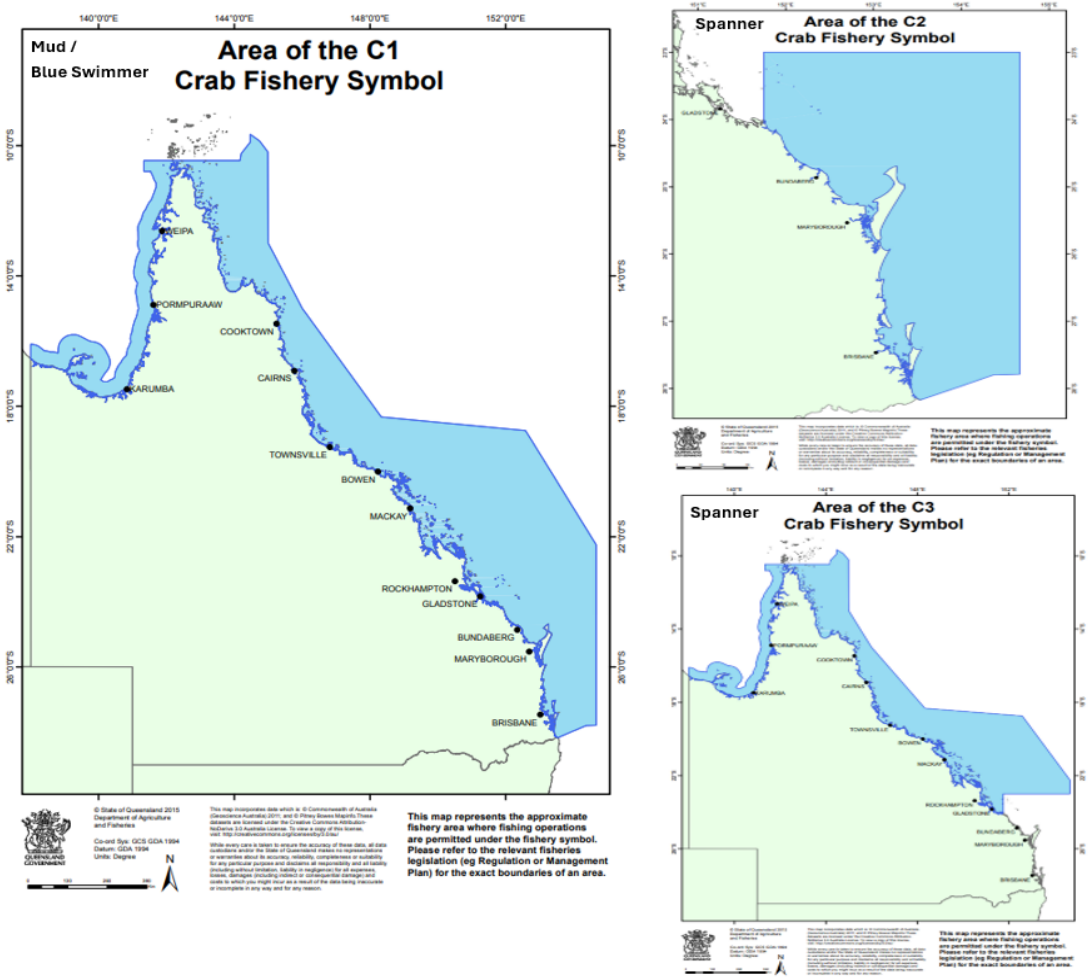


Figure 5-27: Queensland Commercial Fisheries Management Areas: Mud Crab and Blue Swimmer (C1), and Spanner Crab (C2 and C3) Fisheries (Source: Queensland Government, 2025) Commercial Aquaculture

The Sydney rock oyster (*Saccostrea glomerata*) is the principal species cultivated in New South Wales commercial aquaculture (NSW DPI, 2024). Commercial production spans 41 estuaries, with the primary production hubs ranging from Wonboyn River Estuary in the south to the Tweed River in the north, with Port Stephens and Wallis Lake serving as the main producing areas (NSW DPI, 2023).

Production in NSW is largely reliant on natural spatfall. Fertilisation occurs in the water column with the spat (larvae) settling on plastic slats for collection. They are transferred to baskets or trays to grow further. Oysters reach market maturity in approximately 3.5 years (NSW DPI, 2024).

Marine aquaculture in South Australia uses methods including sea-cages, rack and rail, longline and benthic structures. The major species farmed include abalone, seaweed, mussels, Pacific oysters Southern bluefin tuna and Yellowtail kingfish (Department of Primary Industries and Regions South Australia, 2025).

Shellfish cultured in Victoria include blue mussel and abalone that are cultured via longline submerged below the surface of the water to avoid wave action (VFA, 2021a). In Victoria, the Victorian Shellfish Hatchery entered into a commercial agreement to run on a commercial basis in 2012. This diversified from mussel spat to also successfully produce commercial runs of angasi oyster, commercial scallops and Sydney rock oysters (VFA, 2021b). A three- year trial for Sydney rock oyster culture has been proposed in the Gippsland Lakes system through a partnership between the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) and the VFA (VFA, 2021c). Currently, in 2025, 27 sites were made available for tender, for marine aquaculture in Port Philip Bay for the production of shellfish and other species (VFA, 2025). Licences enabling seaweed aquaculture are not currently available in Victoria, however seaweed aquaculture is being trialled at a small number of existing crown lease areas in Victoria's marine aquaculture reserves (VFA, 2024).

In Queensland, Sydney rock oysters are farmed south of Hervey Bay, with the majority of leases located in Moreton Bay.

QX oyster disease caused by the microscopic parasite *Marteilia Sydneyi* is present from southern Queensland to southern New South Wales (Queensland Government, 2025).

5.2 Recreational Fisheries

Recreational fishing in Australia is a multi-billion-dollar industry and includes rock, beach, boat and estuary fishing, using rod and line. Game fishing can include additional equipment such as fighting belts, gimbals and outriggers (Game Fishing Association Australia, 2025a). Most recreational fishing typically occurs in nearshore coastal waters (DAFF, 2024) (shore or inshore vessels) within bays and estuaries, with some recreational game fishing occurring in offshore deep drop locations (VRFish, pers. Comms (ECSP OPP). 20/01/2025. Between 2018-2019 3.81 million fishing events occurred within Victoria. It was found that Victorian fishers were less likely to fish in ocean areas than other states (75.3% compared to 85.0%) and that Victorian fishers are more likely to go fishing in freshwater than other states, with 80.6% of Victorian fishers reporting they went fishing in a freshwater location in the last year (Moore et al., 2023). Charter fishing operations were confirmed to occur in the Environmental Sectors including the Otway Environmental Sector from Port Campbell, Apollo Bay and Warrnambool by Victorian Recreational Fishing Peak Body during ongoing engagement. Game fishing occurs across the Otway Environmental Sectors from Port MacDonnell to Portland and to Narooma in the Gippsland Environmental Sector (Game Fishing Association Australia, 2025b). The variation in recreational fishing intensity along the coast is illustrated in Figure 5-28. Common recreational fish species include tiger flathead, bream, snapper, Australian salmon, and lobster; and offshore catches can include mackerel, tuna, groper and shark.

A total of 15,287 recreational fishing trips were recorded from surveyed Victorian ramps in 2018 – 2019 (IMAS, 2020). Southern bluefin tuna were targeted for 26% of these trips. Portland accounted for 82% of the southern bluefin tuna harvest. Five larger southern bluefin tuna were caught from Port Campbell during this period (IMAS, 2020).

Deep dropline fishing uses electric winches and heavy-duty rods which occurs within deeper waters e.g. over 250m. Target species (AFMA, 2025) within this industry include:

- blue-eye trevalla
- pink ling
- ribaldo
- ocean perch.

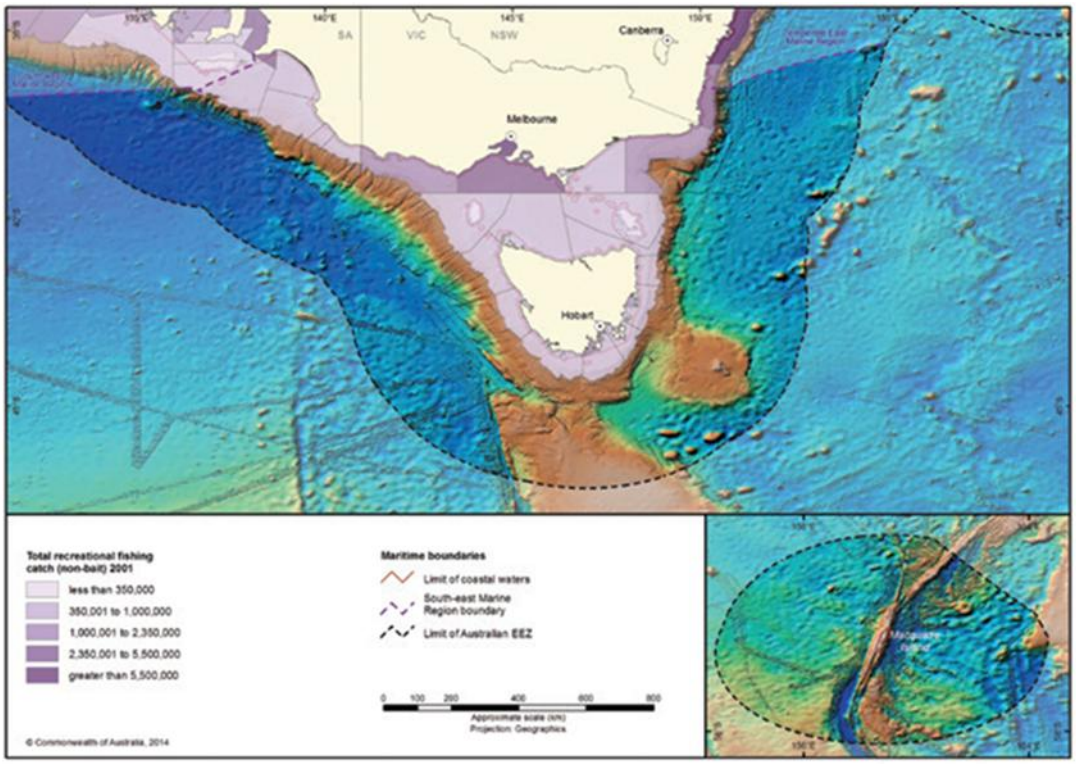


Figure 5-28: Recreational Fishing Catch in South-Eastern Marine Region (Source: DoE, 2015a)

5.3 Coastal Settlements

Australians have a strong affinity to the coast, with over 80% of the population living within 50 km of the coast (Hugo et al., 2013). Some of the Australia's most populated places occur on the coast within the Environmental Sectors. Based on the top ten highest population places in each state, the 22 places listed in Table 5-7 occur along the coast of the Environmental Sectors.

The communities of Orbost, Newmerella and Marlo (within the Shire of East Gippsland) are the closest coastal settlements to Amplitude Energy's BMG and Gippsland assets. At the 2021 Australian census, the estimated resident population for East Gippsland was 48,715 (an increase from 42,926 in 2011) (ABS, 2021). The Shire of East Gippsland has an aging population (.id Consulting, 2017).

Port Campbell is the nearest town to Amplitude Energy's Casino assets. At the 2021 Australian census, the estimated resident population for Port Campbell was 440 persons, with a population estimate of 4,008 person for the Otway region (ABS, 2021). Other coastal communities along the Otway coast include Apollo Bay, Princetown, Peterborough, Warrnambool, Port Fairy and Portland; all provide services to the commercial and recreational fishing industries in southwest Victoria. Portland is Victoria's western-most commercial port and is a deep-water port with breakwaters sheltering a marina and boat ramp. The Port of Warrnambool has a breakwater and yacht club and provides shelter for commercial fishing boats. Port Fairy has both harbour and fish processing facilities, but is not suitable for use by large vessels, nor is Port Campbell.

Table 5-7: Highest Populated Coastal Interfacing Places within the Environmental Sectors (Digital Atlas of Australia, 2025) [1]

	Otway	**Bass Strait**	**Gippsland**	**Sorell**[2]	**SE Tasmania**	**Central NSW**	**SE Queensland**	**Lord Howe**[2]	**Norfolk Island**[2]
Victoria	• Warrnambool	• Melbourne • Geelong							
Tasmania		• Launceston • Devonport • Burnie • Ulverstone			• Hobart				
New South Wales						• Sydney • Newcastle • Central Coast • Wollongong • Gold Coast (Tweed Heads) • Port Macquarie • Coffs Harbour			
Queensland							• Brisbane • Gold Coast- • Sunshine Coast • Bundaberg • Hervey Bay		

Note: 1. All the top ten highest population places in South Australia, are either located to the east of the 'Otway' Environmental Sector, or inland (e.g. Mount Gambier)

5.4 Recreation and Tourism

The coast and marine region within the Environmental Sectors provide a diverse range of recreation and tourism opportunities, including scuba diving, charter boat cruises, cruise shipping, whale and wildlife watching, sailing, snorkelling, surfing, and kayaking. Popular tourist destinations adjacent include Phillip Island, the Great Ocean Road (Victoria); Strahan and the Freycinet Peninsula (Tasmania); Merimbula, Bermagui (New South Wales); and Gold and Sunshine Coasts, and Fraser Island (Queensland). Norfolk Island is a popular tourist destination known for its history and culture, beaches and National Park.

In 2023-24 tourism in Victoria was estimated to be worth $36 billion to the economy in Gross State Product and generated approximately 288,800 jobs (Tourism Research Australia, 2025). The latest data from Tourism Research Australia shows that total tourism expenditure in Victoria was $40 billion in the year ending December 2024. Tourism Gross State Product grew by 13% in 2023–24, which outpaced Victoria's overall growth in GSP of 6%, highlighting the significant role of tourism in supporting the state's economic progress.

The Great Ocean Road region, which stretches the western outskirts of Geelong to the South Australian border Figure 5-29, is characterised for its tourist attractions, including the National Heritage listed Great Ocean Road. 2023-24 regional tourism satellite account results show a total contribution of $1.5 billion gross regional product from the Great Ocean Road region (Tourism Research Australia, 2024).

The Gippsland region, which stretches from Melbourne's eastern outskirts all the way to the state border with NSW (Figure 5 21), is characterised for its tourist attractions. Coastal assets include the Gippsland lakes, Wilsons Promontory National Park, Phillip Island and Croajingolong National Park (Aither, 2019). In 2023 – 2024 the tourism sector contributed 4.7% to the Gross Value Add of regional economy, with $1.2 billion total tourism consumption (Tourism Research Australia, 2024).

Figure 5-29: Victoria's Tourism Regions (Source: Tourism Victoria, 2017)

5.5 Industry

5.5.1 Shipping

The south-east and eastern coasts are some of Australia's busiest in terms of shipping activity and volumes (Figure 5-30; AMSA, 2024). This traffic includes international and coastal cargo trade, and passenger and ferry services. Major ports include Melbourne, Geelong, Western Port, Sydney and Brisbane, with other minor ports important to commercial and recreational fishing, yachts and other pleasure craft.

Amplitude Energy's assets do not coincide with major routes; with higher volumes of traffic located to the south of the wells within the Petroleum Titles VIC/L24, VIC/L32 and VIC/RL13 (Figure 5-31). A shipping exclusion zone ('area to be avoided') also exists around the operating oil and gas platforms in the Gippsland Basin, whereby unauthorised vessels larger than 200 gross tonnes are excluded from entry (Figure 5-32). Two traffic separation schemes have been implemented to enhance safety of navigation around the 'Area to be Avoided' by separating shipping into one-direction lanes for vessels heading north eastwards and those heading south westwards. One separation area is located south of Wilson's Promontory, and the other south of the Kingfisher B platform (Figure 5-32).

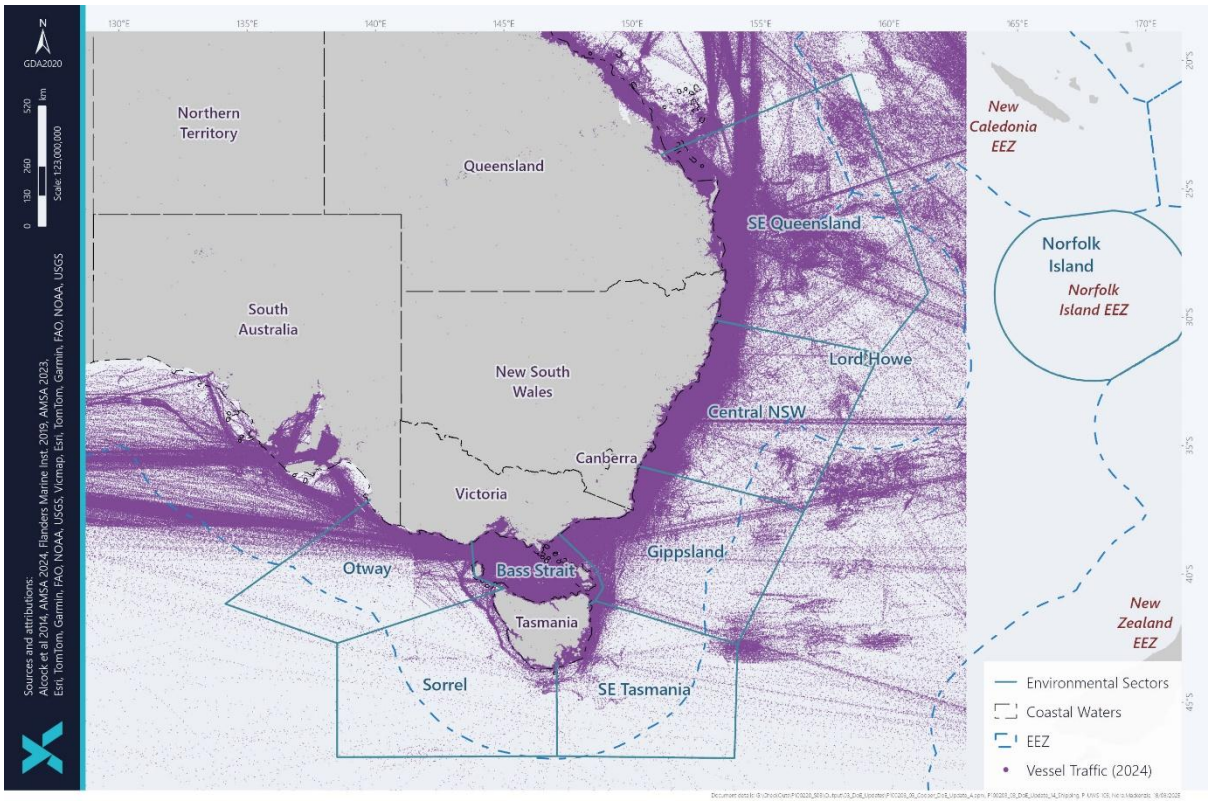


Figure 5-30: Vessel Traffic within the Environmental Sectors for 2024 (Source: AMSA, 2024)

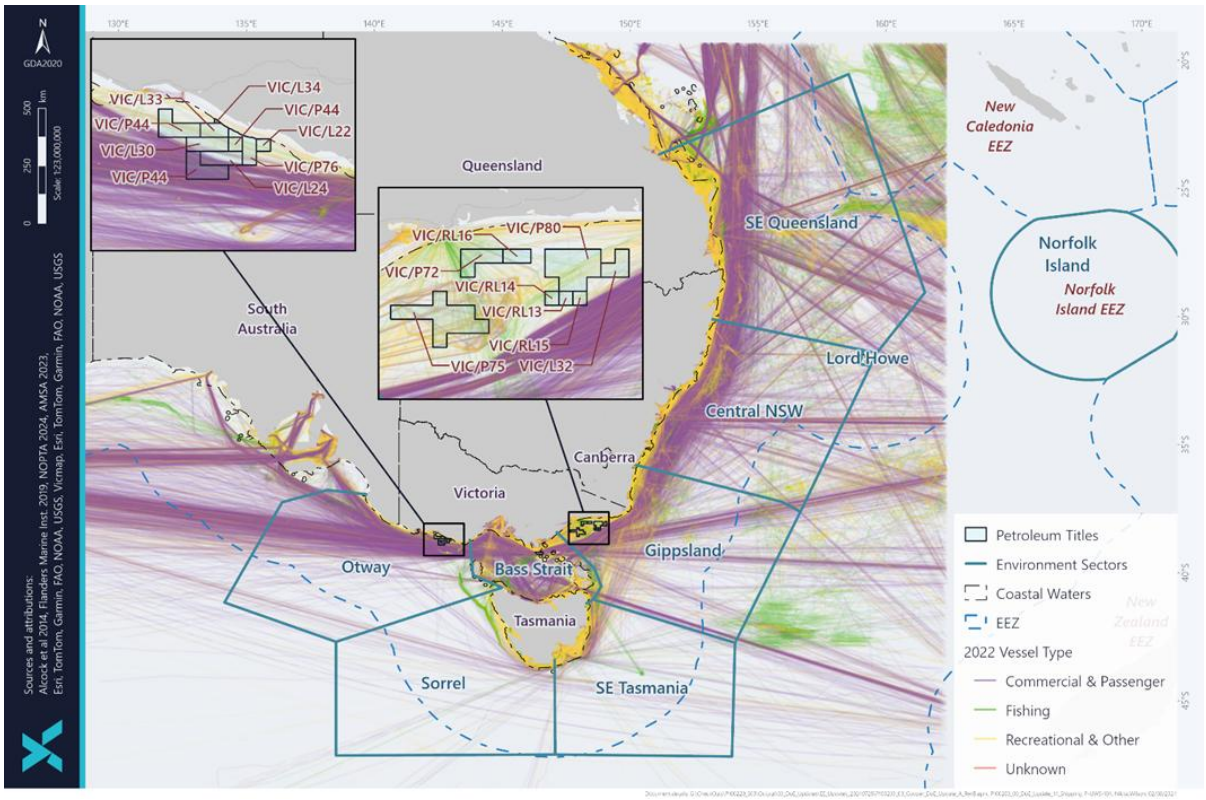


Figure 5-31: Vessel Type in the Vicinity of Petroleum Titles

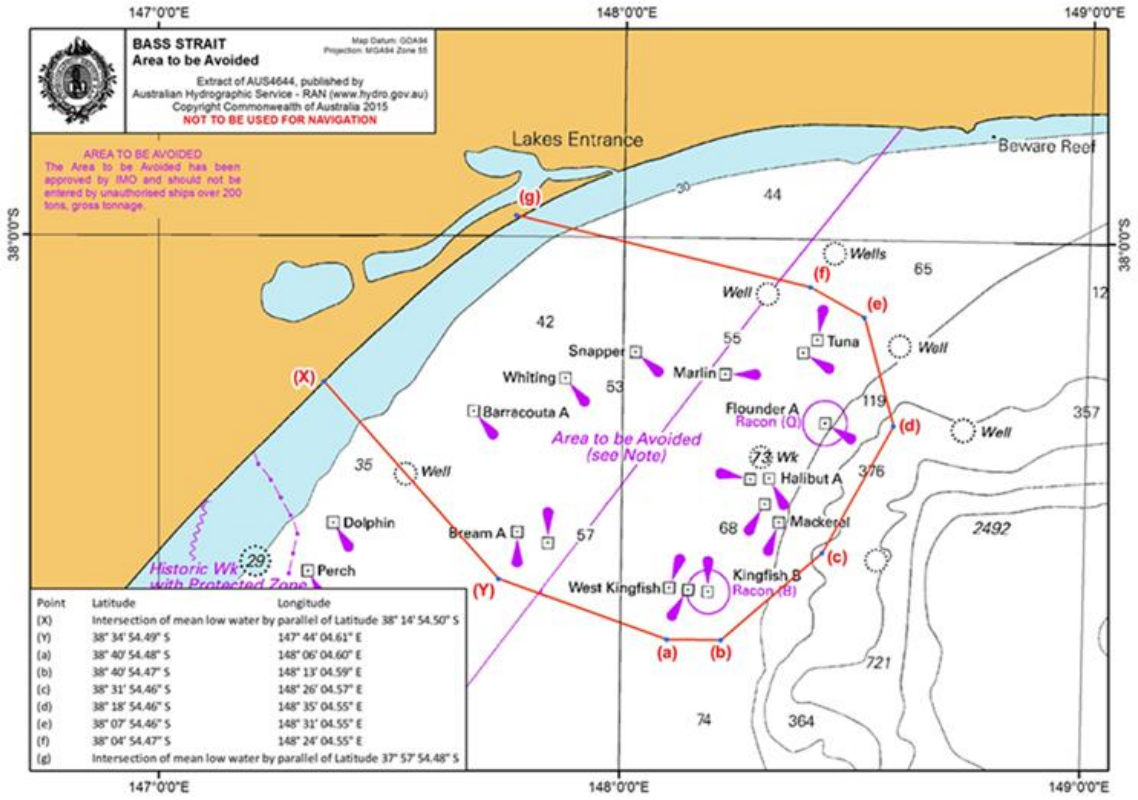


Figure 5-32: Shipping Exclusion Zones (Area to be Avoided) (Source: ABF, 2017)

5.5.2 Oil and Gas Exploration and Production

In 2021-22, oil comprised ~ 36% of all energy consumed in Australia whilst natural gas accounted for 27% of primary energy sources (APPEA, 2023). Renewables increased from 7% in 2019-20 to 8% of primary energy consumption in 2021-22 (APPEA, 2023). In 2021–22, Australia recorded a A$40 billion surplus in the trade of oil and gas — up substantially from the previous year's surplus of $15.9 billion in 2020–21 (APPEA, 2023). Liquefied natural gas (LNG) exports (primarily from northern WA and Queensland) continue to make a significant contribution to Australia's economy).

Victoria's petroleum (oil and gas) exploration and production within the Environmental Sectors is concentrated in the offshore Commonwealth waters of the Otway and Gippsland basins. There are a number of current offshore petroleum titles within both basins (Figure 5-33).

Production from offshore Victoria has been a fundamental in supplying energy to homes and industry in Australia's southern and eastern population centres for over 50 years. From 1967–2015, the Gippsland Basin Joint Venture alone produced 54% of Australia's crude oil and gas (DIIS, 2017). Petroleum infrastructure in Gippsland Basin is well developed, with a network of pipelines transporting hydrocarbons produced offshore to onshore petroleum processing facilities. Several petroleum wells and oil and gas pipelines are located within the Otway, Gippsland and Bass Strait Environmental Sectors (Figure 5-34). Overall production of crude oil and condensate from the Gippsland Basin had been declining for over three decades, while gas production remained steady. In recent years, hydrocarbon production has remained relatively strong due to infill drilling in the developed fields and work-overs undertaken to renew down hole equipment and to open new zones (DIIS, 2017). Total petroleum production from the Gippsland Basin was 74.8 MMboe (11.9 GL) in 2016, up from 61.4 MMboe (9.76 GL) in 2015 (DIIS, 2017).

The Otway Basin is a northwest-trending passive margin rift basin that extends from southeast of South Australia to a boundary with the contiguous Sorell Basin to the west of King Island. The Otway Basin is an established gas producing region; however, most discoveries are confined to the onshore and shallow water inboard parts of the basin. Current offshore production in the Otway Basin includes the Thylacine, Geographe, Casino, Henry and Netherby fields (Figure 5-34). The Minerva gas field, adjacent Casino, ceased production in 2019 and is in the process of being decommissioned. No production is currently occurring in the Torquay or deep-water sub-basins (DIIS, 2017). Over the past few decades, numerous exploration and development wells have been drilled, and seismic surveys have been undertaken in the Otway Basin. The most recent being the Beach Energy Artisan-1 exploration well (Vic/P43) in 2021 and Schlumberger Otway Basin 2D Marine Seismic Survey in 2020.

At the time of writing, the following EPs are under development or assessment, and which propose to undertake activities in the Otway Region in the next 5-years:

- Otway Basin 3D Multi-client Marine Seismic Survey
- Regia MSS
- Beach Energy Otway Drilling Campaign
- Woodside Energy Minerva Facility Decommissioning
- Conoco Phillips Exploration Drilling.

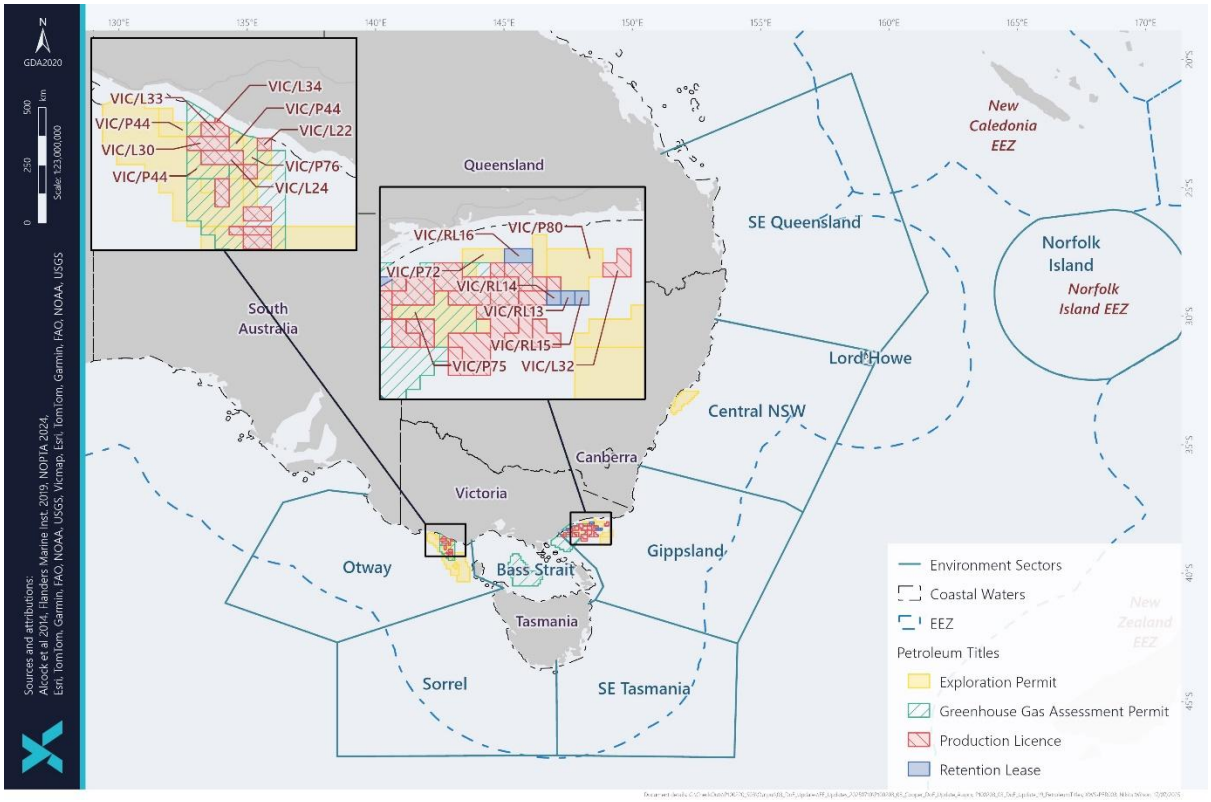


Figure 5-33: Gippsland Basin Oil and Gas Petroleum Titles

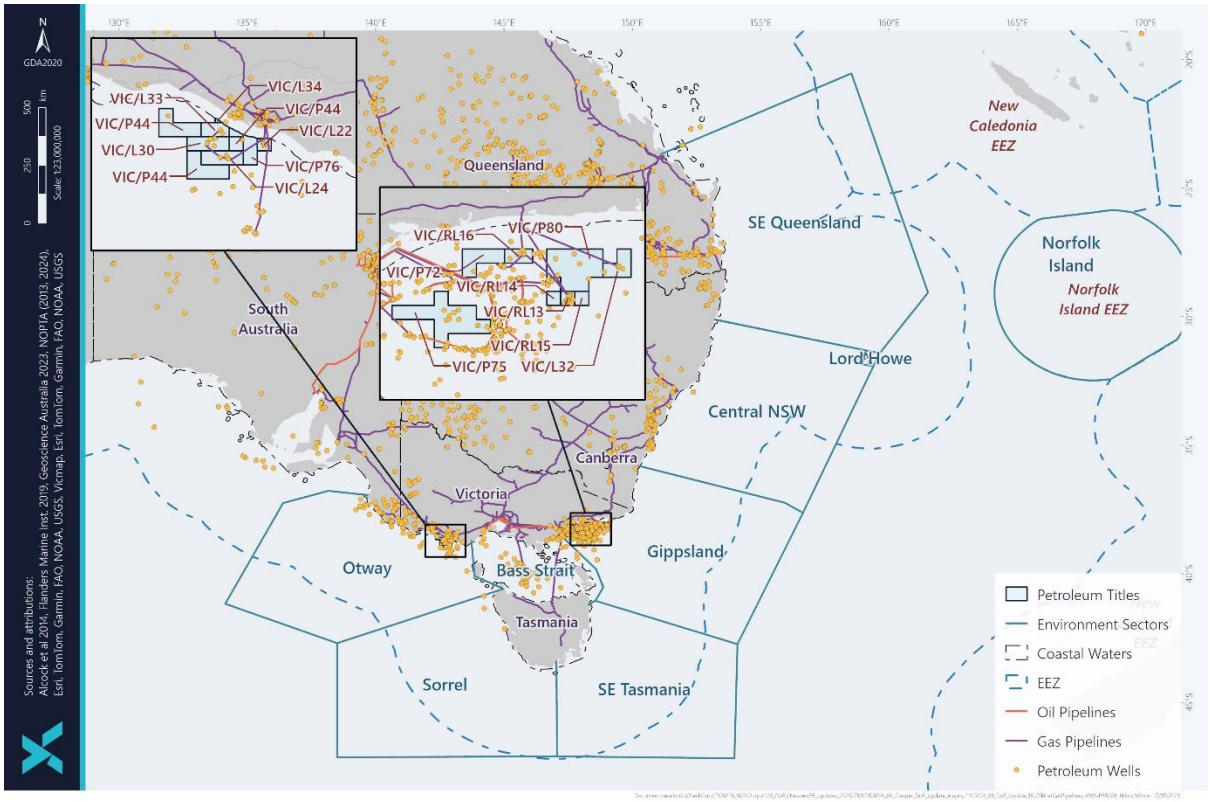


Figure 5-34: Gippsland Basin Oil and Gas Pipelines and Petroleum Wells

5.5.3 Renewable Energy

Energy transition has been rapidly growing in Australia. Several offshore wind areas are declared or waiting to be declared to support the energy transition. Offshore wind farm areas can only be built in areas approved by the Australian Government. Six offshore wind areas have been declared as suitable for offshore wind energy as of July 2025. These are:

- Southern Ocean Victoria
- Gippsland Victoria
- Hunter NSW
- Illawarra NSW
- Bass Strait Tasmania
- Indian Ocean off Bunbury, Western Australia.

One offshore wind farm (OWF), Spinifex OWF, was awarded a feasibility licence in March 2025 and is now in the pre-planning phase of development in the Otway.

The area of the Bass Strait off Gippsland was the first offshore wind zone declared. This spans approximately 15,000 km^2 in Australian waters, running from Lakes Entrance in the east to south of Wilsons Promontory in the west. Within the Otway region the Southern Ocean area was declared between Portland and Warrnambool and covers an area of 1,030 km^2. The Southern Ocean declared area overlaps with Amplitude Energy titles VIC/P44 and VIC/L30. The Australian Government granted a feasibility licence in March 2025 to the Spinifex Offshore Wind Farm which is located within the Southern Ocean declared area.

There are 11 active feasibility licences for offshore wind projects off Gippsland's coast in Victoria (DCCEEW, 2025d). The licence holders are:

- High Sea Wind Pty Ltd
- Gippsland Skies Pty Ltd
- Blue Mackerel North Pty Ltd
- Kut-Wut Bratualung Pty Ltd
- Ørsted Offshore Australia 1 Pty Ltd (Gippsland 01)
- Star of the South Wind Farm Pty Ltd (SOTS)
- Iberdrola Australia OW 2 Pty Ltd (Aurora Green)
- Navigator North Project Pty Ltd
- Ørsted Offshore Australia 1 Pty Ltd (Gippsland 02)
- Kent Offshore Wind Pty Ltd
- Great Eastern Offshore Wind Farm Project Co Pty Ltd.

Offshore wind areas within the Environmental Sectors are shown in Figure 5-35.

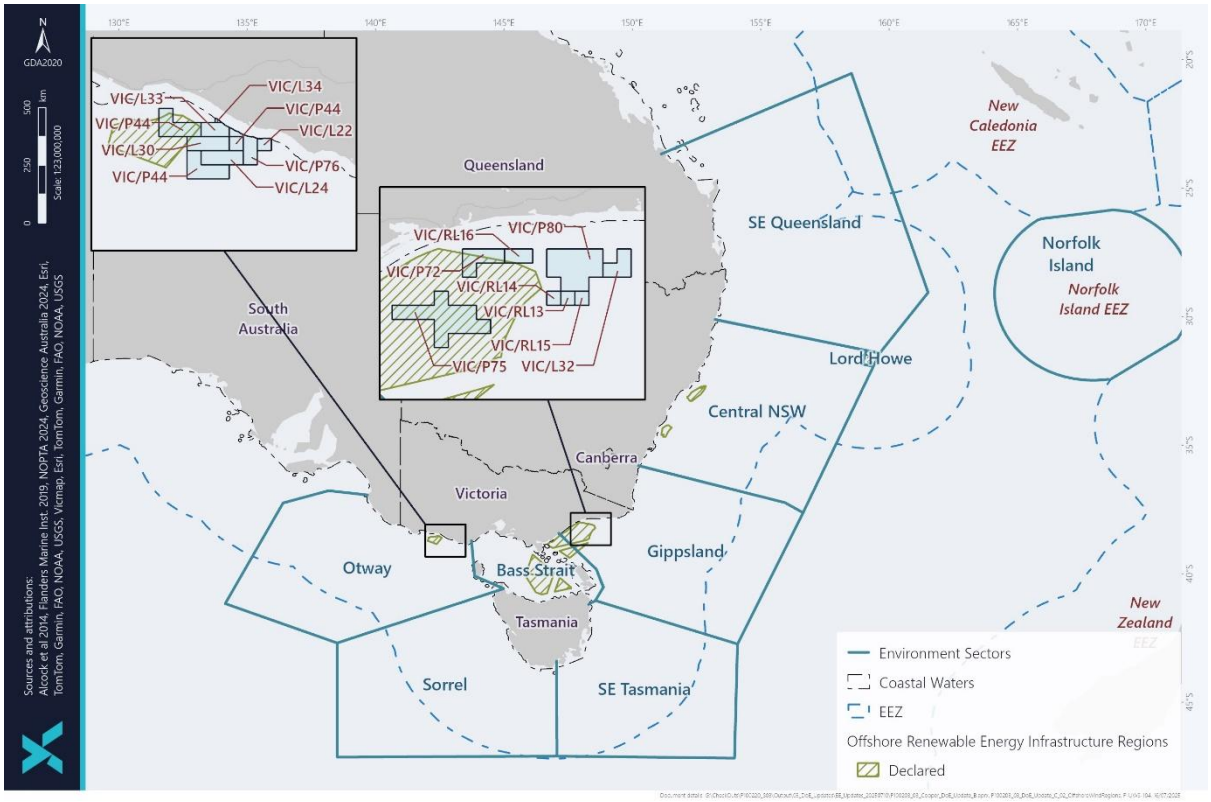


Figure 5-35: Offshore Wind Farm Declared Areas

5.5.4 Subsea Cables and Pipelines

Submarine cables are underwater infrastructure linking to other zones of Australia or with other countries; the submarine communications cables carry the bulk of Australia's international voice and data traffic. Several submarine cables were identified within the Environmental Sectors, including (but not limited to):

- Bass Strait: two operational submarine transmission lines (both Telstra fibre optic cables).
- Basslink: a subsea interconnector, completed in 2006 which joins the Tasmanian and national electricity grid.
- Indigo Central: a subsea interconnector, completed in 2019 offering direct, low latency connectivity from Sydney to Perth.
- The East Coast cable and Hawaiki Nui have a landing in Melbourne and are expected to be installed by 2024 and 2025, respectively.
  - The East Coast Cable will connect two existing cable systems (the North West Cable System and the Australia-Singapore Cable). The East Coast Cable will connect two existing cable systems (the North West Cable System and the Australia-Singapore Cable).
  - Hawaiki Nui will connect Australia, New Zealand, American Samoa, Hawaii and the west coast of the United States. The Hawaiki Nui will connect Australia, New Zealand, American Samoa, Hawaii and the west coast of the United States.

Under the *Telecommunications and Other Legislation Amendment (Protection of Submarine Cables and Other Measures) Act 2005*, the Australian Communications and Media Authority (ACMA) can propose cable protection zones over these assets if they are considered to be of national significance (DEWHA, 2009b). Two protection zones have been declared in Sydney. The Northern Sydney Protection Zone which extends 74 km offshore from Narrabeen beach and to the depth of 2000 m, and the Southern Sydney Protection Zone which extends 55 km offshore from Tamarama and Clovelly beaches, and to the depth of 2000 m (ACMA, 2022). No protection zones have been declared within the Otway or Gippsland Environmental Sectors.

5.5.5 Defence

The Australian Defence Force conducts a range of training, research activities, and preparatory operations (Figure 5-36). Australian Defence Force activities within the Environmental Sectors include transit of naval vessels, training exercises, shipbuilding and repairs, hydrographic survey, surveillance and enforcement, demolition, use of explosives, use of radar, sonar, sonobuoys, flares, sensors and other equipment, and search and rescue. Major bases within the Environmental Sectors include:

- HMAS Cerberus in Western Port Bay, Melbourne (naval training)
- the multi-purpose wharf at Twofold Bay, Eden (naval operations)
- Fleet Base East in Sydney (Navy destroyers and support ships)
- HMAS Waterhen in Sydney (Navy minehunting vessels)
- Wollongong and Jervis Bay (Defence training).

Primary training locations within the Environmental Sectors include East Australia Exercise Area off the south coast of New South Wales, and the Royal Australian Air Force flying training areas and air-to-air ranges off the north coast of New South Wales (Figure 5-37).

Mine fields were laid in Australian waters during World War II. Post-war minefields were swept to remove mines and to make marine waters safe for maritime activities. There are three areas identified as dangerous due to unexploded ordnances, located south and east of Wilson's Promontory (Figure 5-35).

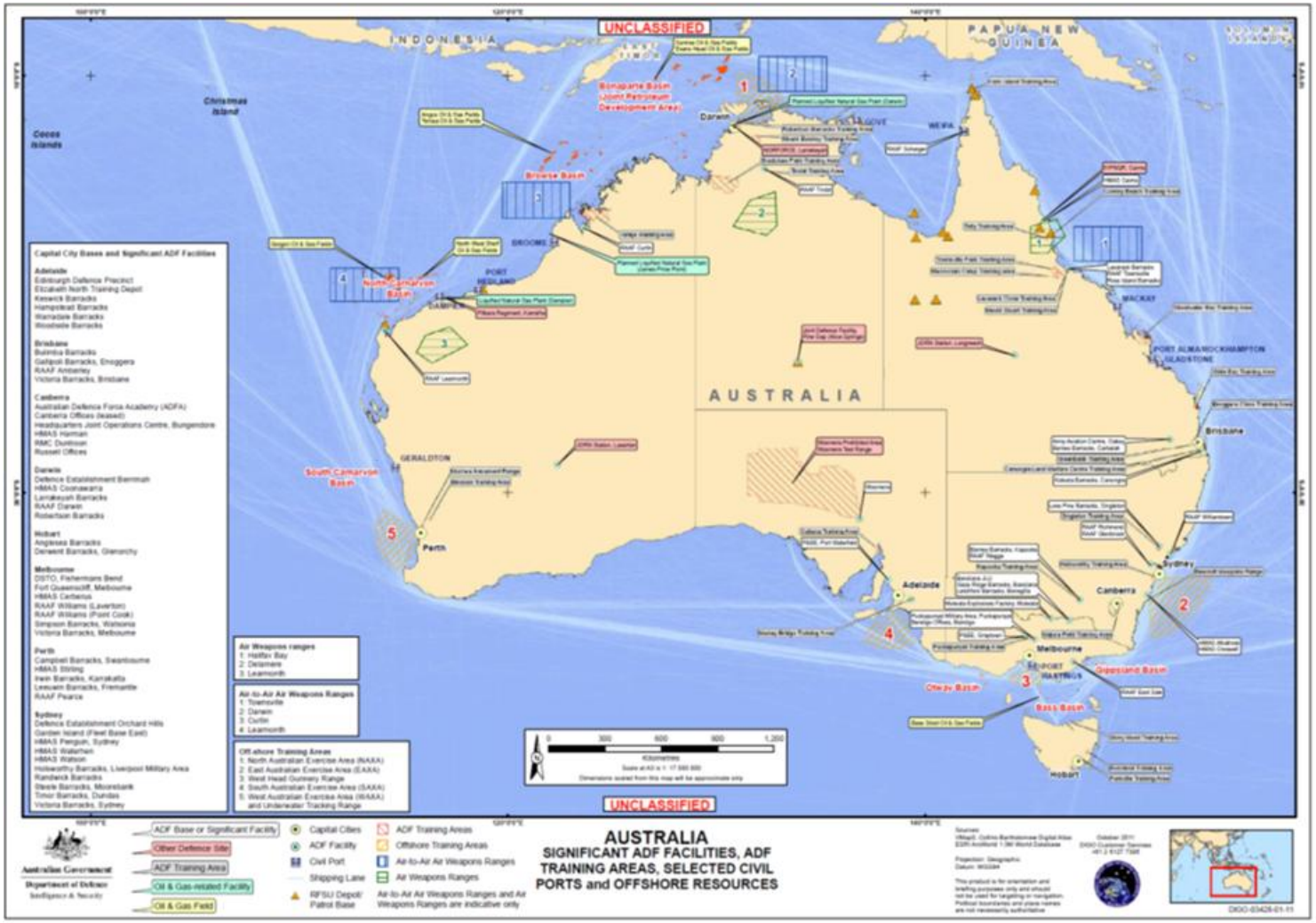


Figure 5-36: Significant Defence Bases and Facilities in Australia (Source: Department of Defence, 2014)

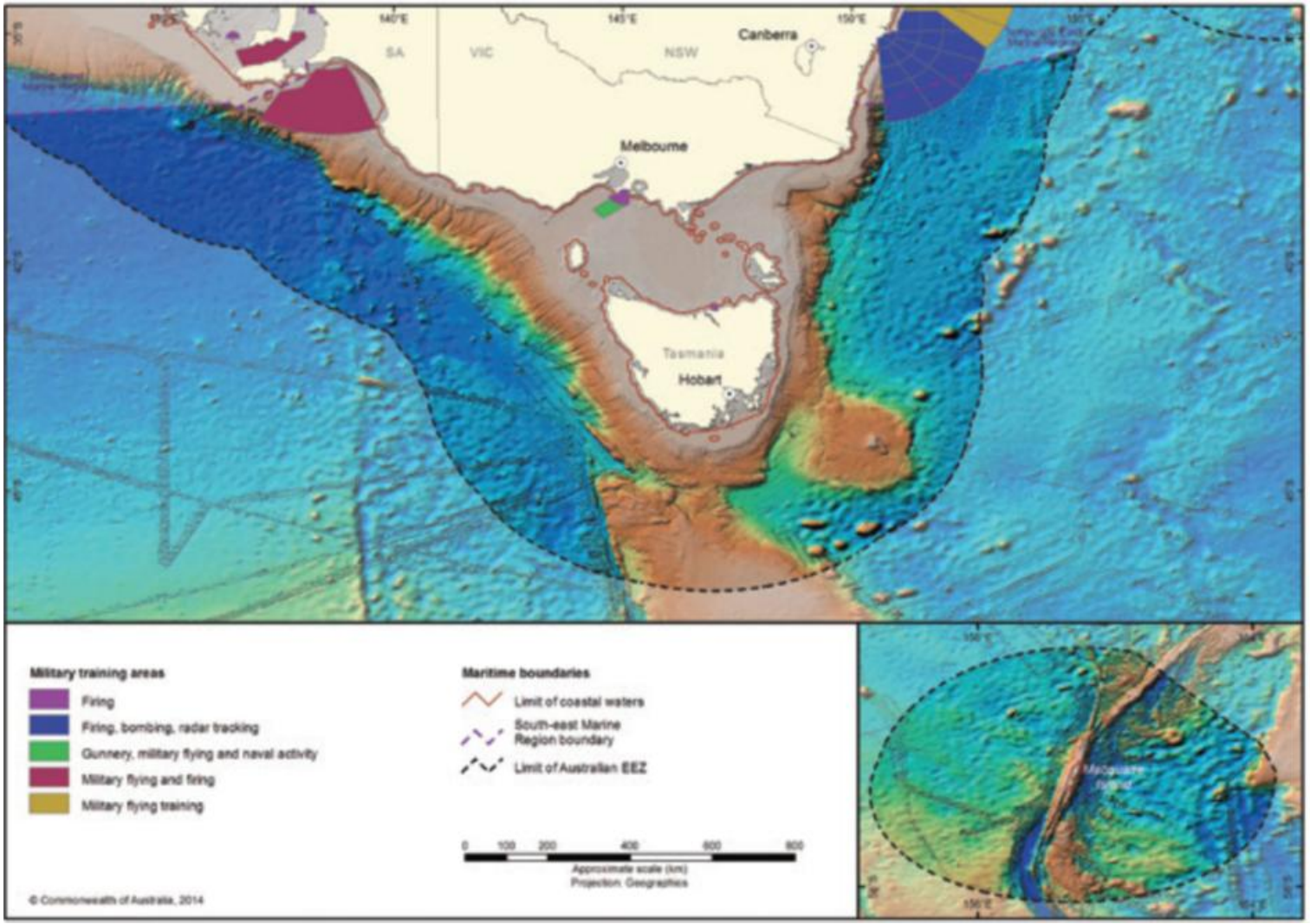


Figure 5-37: Significant Defence Bases and Facilities in Southern Australia (Source: Department of Defence, 2014)

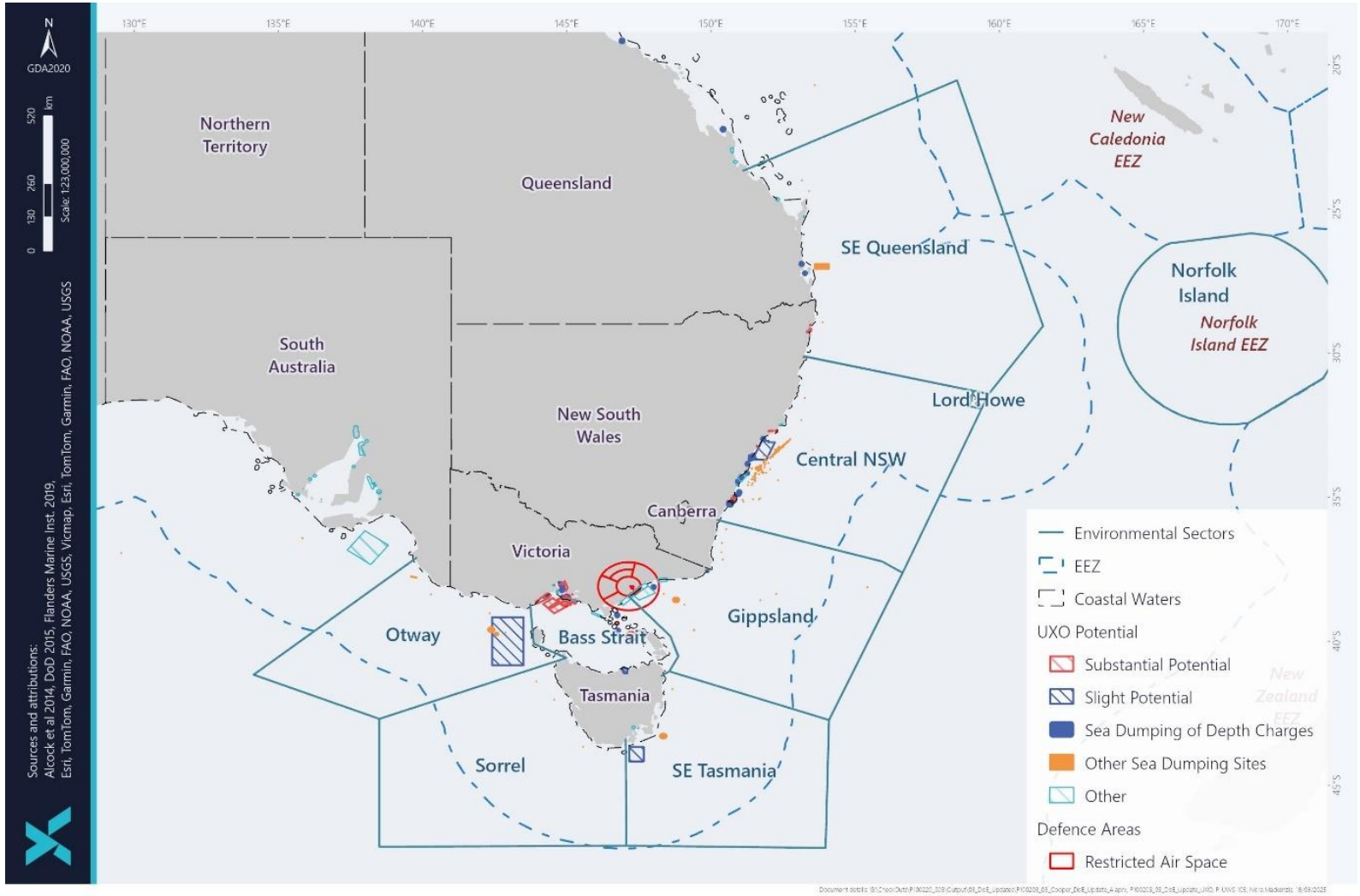


Figure 5-38: Department of Defence Activities and Potential UXO Located within the Environmental Sectors

5.6 Culture and Heritage

5.6.1 First Nations Cultural Heritage

First Nations people cultural heritage refers to the knowledge and lore, practices and people, objects and places that are valued, culturally meaningful and connected to identity and Country (Victorian Aboriginal Heritage Council, 2023).

To determine relevant First Nations cultural heritage that may be in proximity to Amplitude Energy activities, the following sub-sections provide details on:

- Knowledge and lore:
  - History of Sea Country (Section 5.6.1.1).
  - Modern First Nations coastal uses and interests (Section 5.6.1.2).
- Practices and people:
  - Relevant First Nations groups (Section 5.6.1.3 to 5.6.1.5).
  - Indigenous Land Use Agreements (Section 5.6.1.6).
  - Native Title (5.6.1.7).
  - Indigenous Protected Areas (Section 5.6.1.8).
- Objects and places that are valued, culturally meaningful and connected to identity and Country:
  - Values and sensitivities (Section 5.6.1.9)

5.6.1.1 History of Sea Country

Sea Country is not distinguishable from land-based Country to First Nations Peoples. It includes parts of open ocean, beaches, land and freshwater on the coast and 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 Peoples 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) Amplitude Energy offshore activities overlap elements of sea country. These include the coast, open ocean and living things; these things are ecologically and spiritually connected to First Nations culture.

First Nations groups hold strong connections to the south-east marine region, as occupation of coastal areas dates back over at least 40,000 years (DoE, 2015a). The coastal area of south-east Australia was amongst the most densely populated regions of pre-colonial Australia; these areas provided an abundance of marine and other resources that were not available away from the coast and oceans (NOO, 2002). First Nations Peoples relationship with offshore waters was based on travel to islands in bark rafts and canoes, and the use and management of coastal species (e.g., migratory eels and bull kelp) that are part of ocean ecosystems far from the coast (NOO, 2002). During recent ice age periods (the last ending approximately 14,000 years ago), sea levels were significantly lower, and the coastline was a significant distance seaward of its present location, enabling occupation and travel across land that is now submerged.

Holdgate, et. al. (2003) indicates the offshore Gippsland area was subject to a maximum sea-level fall of ~120m below present and that there are preserved fluvial features created by the exposure of the marine shelf at the last glacial maximum. For a maximum retreat of 120 m below present day, this indicates some Amplitude Energy Gippsland permits would have been terrestrial regions or shallow marine regions. Areas now submerged would have provided for First Nations People of that

time, and some landscape features now partially submerged, continue to have a place in culture and stories told today.

During consultation with Eden Local Aboriginal Lands Council, stories were shared on strong links to killer whales that would push baleen whales to the shallows where local warriors would kill the whales and share the soft parts of the whale with the killer whales (Figure 5-39). This knowledge was shared with whaling fleets circa 1800's, who also hired some of the local First Nations community for their whaling skills.

There was both a practical symbiotic connection as described, and a spiritual connection, with some clans believing that ancestral spirits would pass into the killer whales.

Eden Local Aboriginal Lands Council also described connections to porpoises that would herd fish to shore with fish then being captured by the community.

Figure 5-39: Image Showing Mural at Eden Killer Whale Museum Depicting First Nations Killer Whale Legend

It is likely that the palaeo shelf was exposed and incised by fluvial systems over glacial maximum periods from the time of Australia's First Nations Peoples (~60,000 years ago to present day) (De Decker, et al., 2020). Areas now submerged within the Bass Strait would have provided for First Nations People of that time, and there are some landscape features now partially submerged which continue to have a place in culture and stories told today. Within the Otway region, the Tyrendarra lava flow is a particular landscape and seabed feature which is linked to First Nations stories and deep continued connection with Country. The lava flow extends from Mt Eccles to ~15 km offshore, east of Portland. The Budj Bim aquaculture system and network of stone dwellings was engineered from the lava flow by First Nations People millennia ago to harvest Kooyang (short-finned eel) from the rivers and wetlands. The aquaculture system forms part of the world heritage listed Budj Bim Cultural Landscape (UNESCO 2023). Evaluation of high-quality 3D seismic imagery has indicated there is no geological evidence of recent (500,000 years or less) volcanic or hydrothermal flow events within the sedimentary record within Amplitude Energy's operated Otway offshore acreage.

Several crater complexes and lava flows are present within the greater onshore region, however, are unlikely to extend into the Amplitude Energy acreage. During meetings with Gunditj Mirring Traditional Owners Aboriginal Corporation, and from review of the recent Sea country Plan (GMTOAC, 2023) some additional values and sensitivities were outlined which include connection to Karntubul (whales), Koorn Moorn (seals), the Bonney upwelling and Deen Maar (see Section 5.6.1.11).

5.6.1.2 Modern Indigenous Coastal Uses and Interests

First Nations people hold strong connections to the south-east marine region. The Victorian coast is of significance with respect to First Nations cultural heritage. The Victorian coastline includes areas where there may be no physical evidence of past cultural activities but includes places of spiritual or ceremonial significance, places where traditional resource use occurs or trade and travel routes (Aboriginal Victoria, 2008).

Contemporary First Nations interests in the region are diverse and First Nations communities of the South-east and Temperate East Marine Regions continue to strengthen cultural and spiritual connection to the ocean, and to use ocean resources for food, traditional purposes and income (Commonwealth of Australia, 2015b). The Eastern Maar Country Plan describes the country's first peoples as continuing to utilise coastal resources, collecting tucker such as abalone and crayfish.

5.6.1.3 Relevant First Nations Groups – South Australia

A portion of the coastal area within the Otway Environmental Sector overlaps with the state of South Australia and is associated with one First Nations group. No Recognised Aboriginal Representative Body (RARB) has been declared for the area. Therefore, the Map of Indigenous Australia (AIATSIS, 1996) was used to determine the formally recognised First Nations people of the southeast region of South Australia (Figure 5-40).

The Buandig people (alternative spelling includes but is not limited to Boandik and Bunganditj) are the Traditional Owners of this southeast region of South Australia. Bungandiji Country includes the coastal area from the south of Robe to the mouth of the Glenelg River at Nelson, Victoria and has been occupied by the Buandig people over the past 50,000 years (City of Mount Gambier, 2024). The Buandig people lived near sandy beaches and tidal estuaries relying on the coastal and marine environment for resources with shellfish being of particular importance.

The Ngarrindjeri are the Traditional Owners of the Lower Lakes, Murray Mouth and Coorong and along the River Murray as far north as Mannum. The Ngarrindjeri Nation is made up of 18 Laklinyeris (tribes). The First Peoples of the River Murray and Mallee Region are the Traditional Owners of the River Murray area from the Victorian border to Morgan (ABMC, 2025).

Figure 5-40: Map of Indigenous Australia – South Australia (Source: AIATSIS, 1996)

5.6.1.4 Relevant First Nations Groups – Victoria

The coastal areas of the Otway Basin, Bass Strait and Gippsland Basin are associated with several First Nations groups (Figure 5-41). The Victorian Aboriginal Heritage Council's Reconciliation Action Plan map was used to determine the formally recognised First Nations people of the Victorian coastline (VAHC, 2023). First Nations groups with connection to land and Sea Country along coastal Victoria include:

- Gunditjmara people are the formally recognised First Nations people of the western coast of Victoria (Otway) from the SA border to Portland/Port Fairy.
  - The Guntitj Mirring Traditional Owners Aboriginal Corporation (GMTOAC) conveyed their responsibility for protecting and healing country in the event of an emergency response.
- Eastern Maar people are the formally recognised traditional owners of the western/central coastline of Victoria (Otway) from Portland/Port Fairy to Lorne.
- Wadawurrung people are the formally recognised traditional owners of the central coastline of Victoria (Bass Strait) from Lorne to Geelong.
- Bunurong people are the formally recognised traditional owners of the central coastline of Victoria (Bass Strait) from Melbourne to Inverloch.
- Gunaikurnai people are the formally recognised traditional owners of the eastern coastline of Victoria (Gippsland Basin) from Port Welshpool to Lakes Entrance.
  - The Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC), has shared knowledge of some sites and types of artefacts known in the Orbost area. A strong desire to be involved in protecting Country was expressed, whether this be during operations (possibly supporting marine mammal observation programs), or during emergency events in providing local cultural advice to the response agency and potentially being able to support oiled wildlife response (under direction of DEECA).

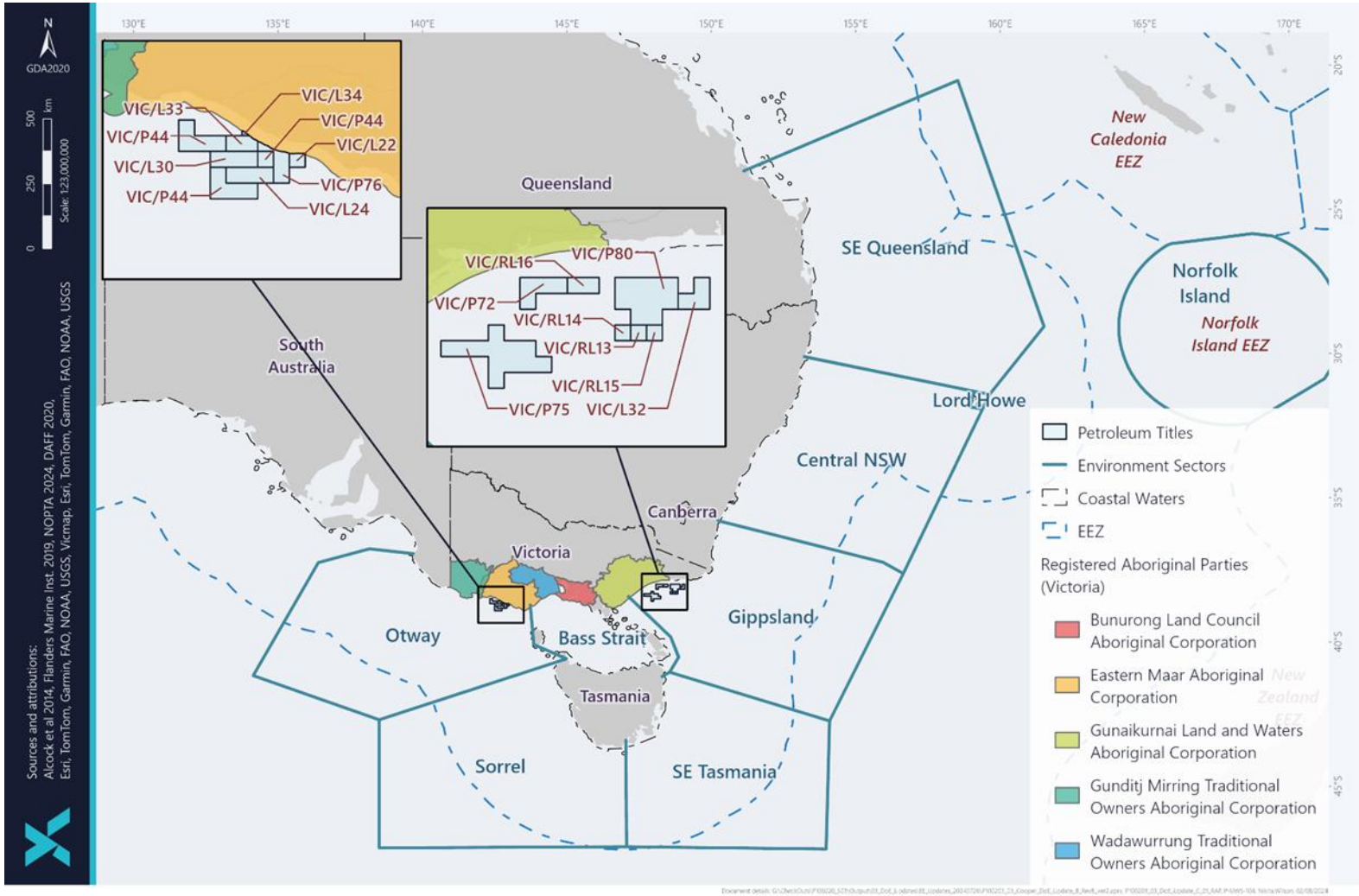


Figure 5-41: Registered Aboriginal Parties Relevant to the Victorian Coastline

5.6.1.5 Relevant First Nations Groups – Southeast NSW

The Gippsland Environmental Sector also includes part of Southeast NSW. The coastal areas of Southeast NSW comprise a number of clans with many using various Yuin dialects. The NSW Aboriginal Land Council map was used to identify First Nations people of NSW (Figure 5-43). Collectively they form the claimant group known as South Coast Peoples. Administratively community services are supported through 13 Local Aboriginal Land Councils, each with its own board and CEO. The South Coast People have submitted a Native Title Determination Application relating to the lands and waters from Hacking River to Towamba River (Figure 5-42).

During consultation with the southern-most LALC, stories have been shared with Amplitude Energy representatives regarding connections to marine mammals (see 5.6.1.10). A strong desire to be involved in supporting any emergency response activities was expressed in the unlikely case of an oil spill threatening Country.

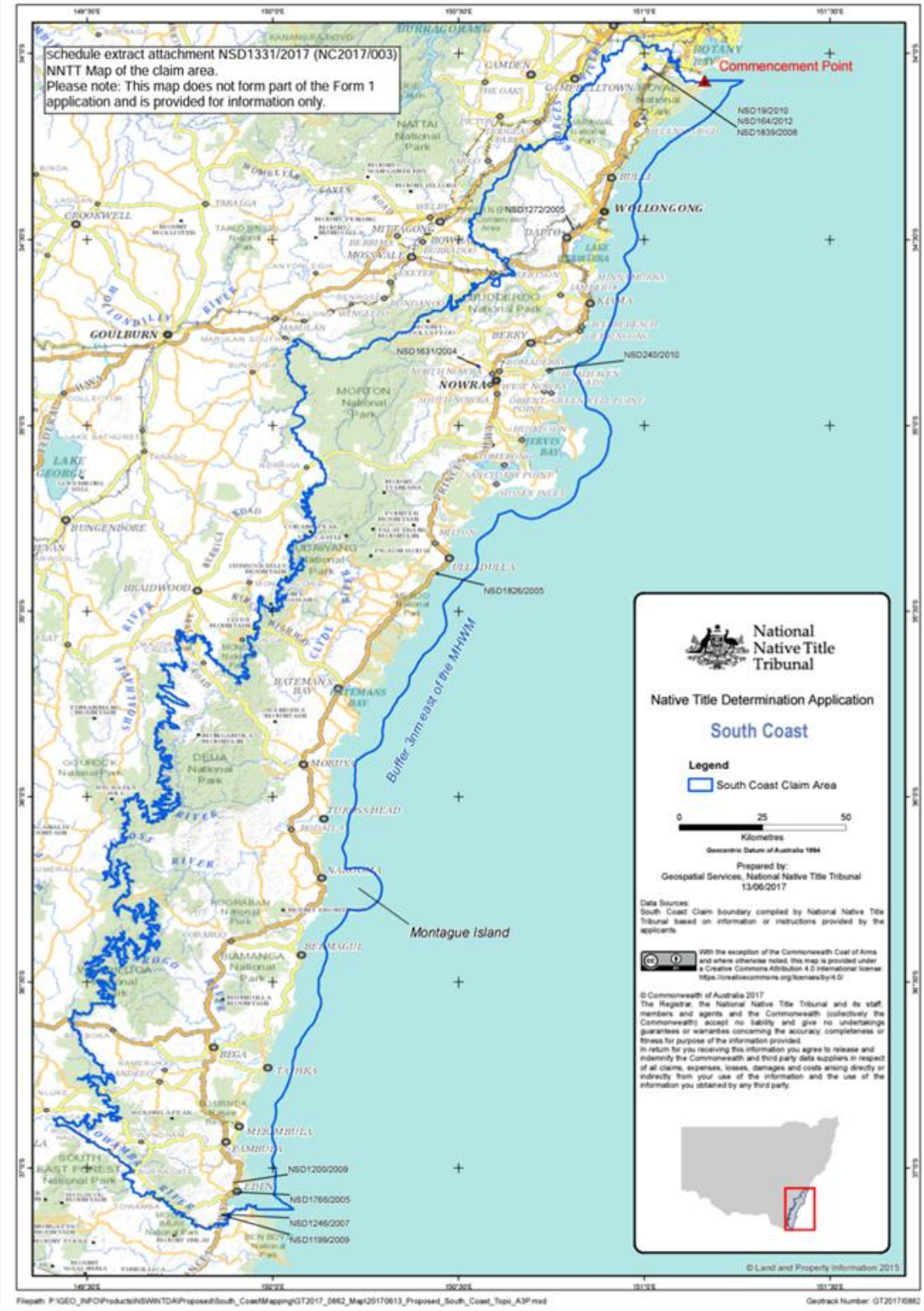


Figure 5-42: Native Title Determination Application – South Coast Map (Map reproduced with the kind permission of the National Native Title Tribunal (Source: NNTT, 2017)

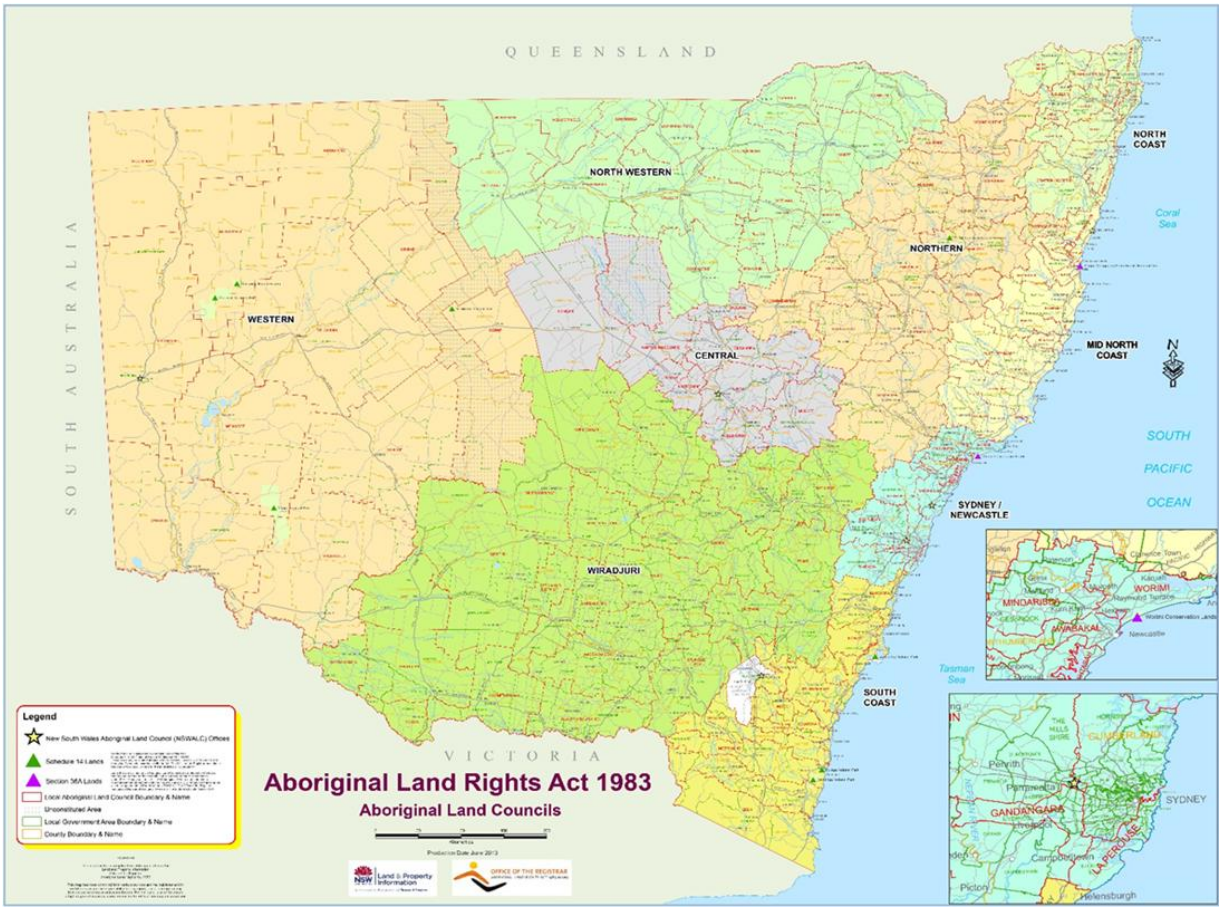


Figure 5-43: New South Wales Local Aboriginal Councils

5.6.1.6 Indigenous Land Use Agreements

Indigenous Land Use Agreements (ILUA) across Australia within the Environmental Sectors. ILUAs are voluntary agreements regarding the management of portions of land agreed upon by native title parties and others. ILUAs within the State of Victoria are listed below and displayed in Figure 5-44. There are no ILUAs within SE Tasmania, Sorrel, Lord Howe or Norfolk Island Environmental Sectors.

Indigenous Land Use Agreements – Otway Environmental Sector

- Gunditj Mirring people and the State of Victoria (VI2006/004).
- Gunditj Mirring Non-Extinguishment Principle ILUA (VI2010/001).

Further, there has been multiple ILUAs between proponents and Indigenous communities with agreements including:

- BHPP – Minerva (VIA1999/001).
- SEAGAS Port Campbell VIC to Torrens Island SA Pipeline with the Gunditjmara people (VI2015/002).
- Gournditch Mara and Essential Petroleum Resources Ltd (VI2005/006).

No existing South Australian ILUAs are recorded on the National Native Title Tribunal within the Otway Environmental Sector.

Indigenous Land Use Agreements – Gippsland Environmental Sector

On the Victorian coastline there are the following ILUAs recorded on the National Native Title Tribunal associated with the groups listed in section 5.6.1.4.

- Gunaikurnai Fee Simple Grants ILUA – Terms of Access (VI2023/001).
- Gunaikurnai and Icon Energy ILUA – Exploration (VI2013/008).
- Gunaikurnai Settlement ILUA – Native Title Settlement (VI2010/003).

Further, there has been multiple ILUAs between proponents and Indigenous communities with agreements including:

- Twofold Bay ILUA (NI2001/003).
- Gumbaynggirr (Boney) Settlement ILUA (NI2018/004).

Indigenous Land Use Agreements – Central NSW Environmental Sector

The following ILUAs recorded on the National Native Title Tribunal within the Central NSW Environmental Sector include:

- Gumbaynggirr (Boney) Settlement ILUA (NI2018/004).
- Gumbaynggirr Wenonah Head ILUA (NI2018/005).

Indigenous Land Use Agreements – Bass Strait Environmental Sector

The following ILUAs recorded on the National Native Title Tribunal within the Bass Strait Environmental Sector include:

- Gunaikurnai and Icon Energy ILUA – Exploration (VI2013/008).
- Gunaikurnai Settlement ILUA – Native Title Settlement (VI2010/003).
- Blairgowrie ILUA – Development (Community) (VIA200/004).
- **Indigenous Land Use Agreements – SE Queensland Environmental Sector**

The following ILUAs recorded on the National Native Title Tribunal within the southeast Queensland Environmental Sector include:

- Bundjalung People of Byron Bay (NI2006/004)
- Ti Tree Lake (Taylor's Lake) (NI2006/005)
- Yaegl Interim Licences ILUA (NI2018/006)
- Bandjalang Interim Licences ILUA (NI2018/008)
- Cavanbah (Byron Bay) Arakwal Indigenous Land Use Agreement (NI2019/005)
- Bunjalung of Byron Bay (Arakwal) (NIA2001/001)
- Ariadne Area Agreement (QI2002/069)
- Stuart Stage 2 Project ILUA (QI2003/063)
- Port Curtis Coral Coast & QGC Pty Limited ILUA (QI2010/009)
- Santos Petronas Port Curtis Coral Coast GLNG ILUA (QI2010/011)
- Surat Gladstone Pipeline Pty Ltd and Port Curtis Coral Coast ILUA (QI2010/017)
- Port Curtis Coral Coast and Australia Pacific LNG Pty Limited ILUA (QI2010/042)
- Quandamooka State ILUA (QI2011/038)

- Quandamooka Redland City Council ILUA (QI2011/039)
- Arrow Energy and Port Curtis Coral Coast People Arrow LNG Project ILUA (QI2012/092)
- Gladstone, Rockhampton and Bundaberg Ports Project ILUA (QI2014/026)
- Fraser Island, Great Sandy National Park / K'Gari ILUA (QI2014/088)
- Port Curtis Coral Coast People and Local Government ILUA (QI2016/045)
- Port Curtis Coral Coast Tenure Resolution ILUA (QI2017/013)
- Port Curtis Coral Coast Protected Areas ILUA (QI2017/014)
- Quandamooka Tenure Resolution ILUA (QI2019/027)
- Tangalooma ILUA (QI2019/028)
- Cooloola Great Walk Ecotourism Project ILUA (QI2022/021)
- Scarborough Surrender Area ILUA (QI2023/002)
- Dunwich Sewage Treatment Plant (QIA2000/011).

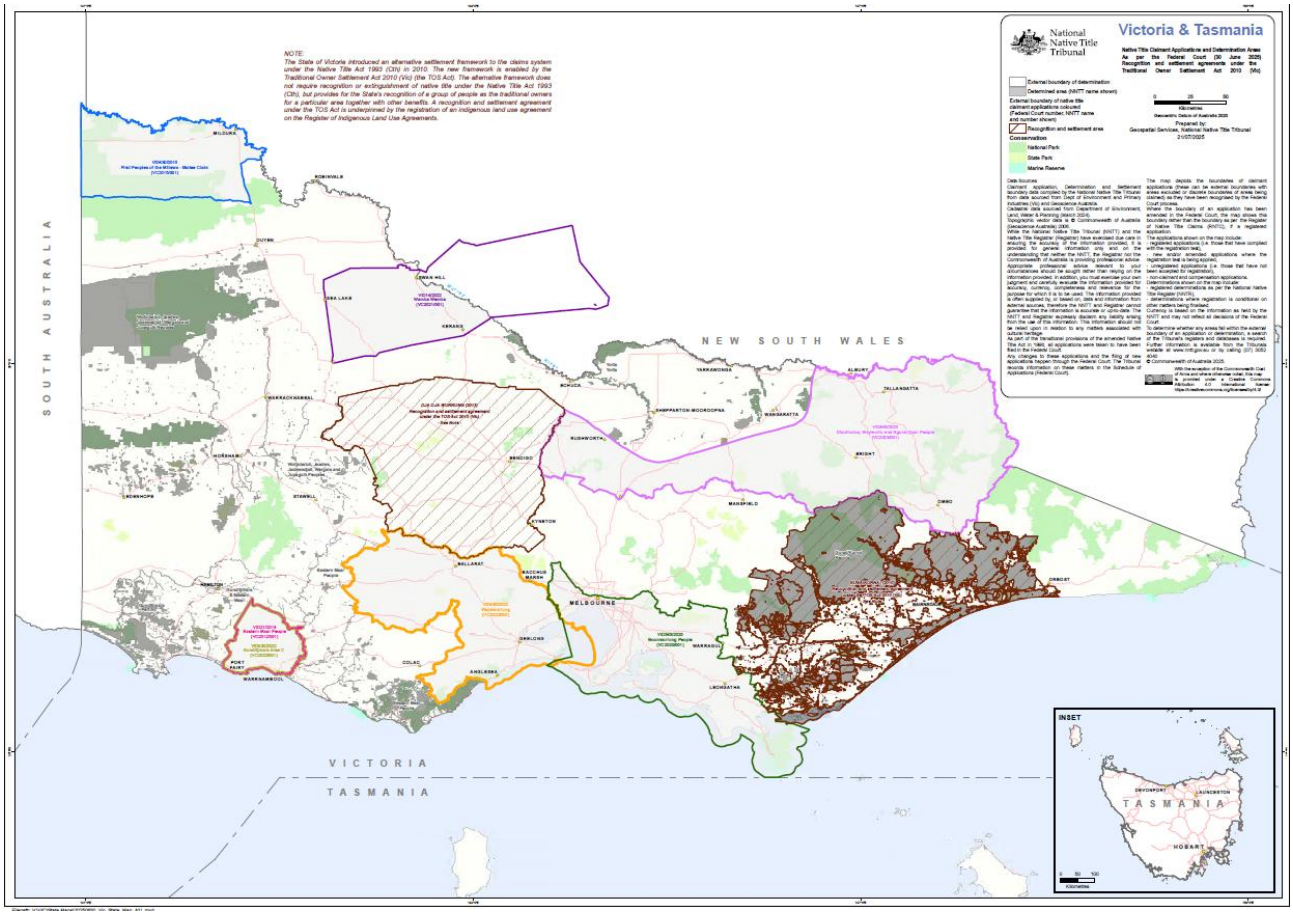


Figure 5-44: ILUAs within the State of Victoria/ Tasmania (Source: NNTT, 2025)

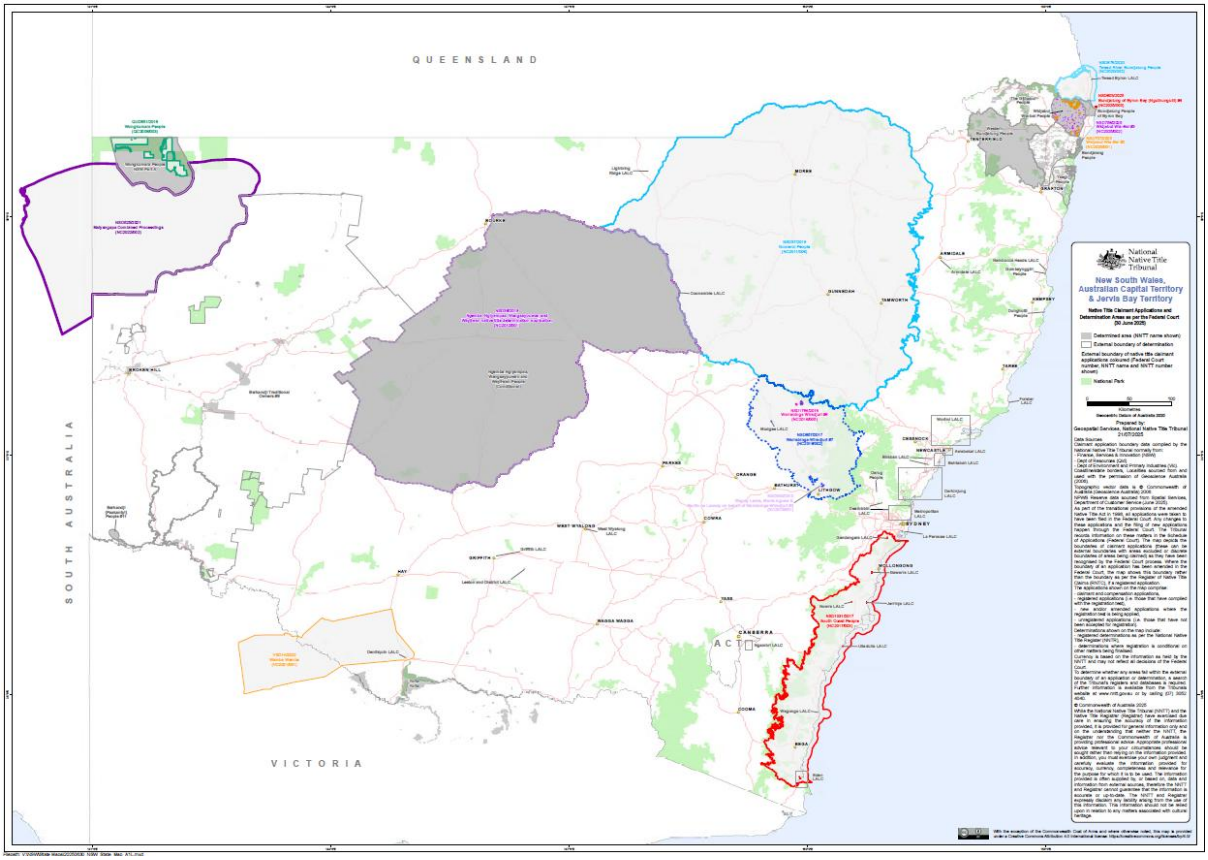


Figure 5-45: ILUAs within the State of New South Wales (Source: NNTT, 2025)

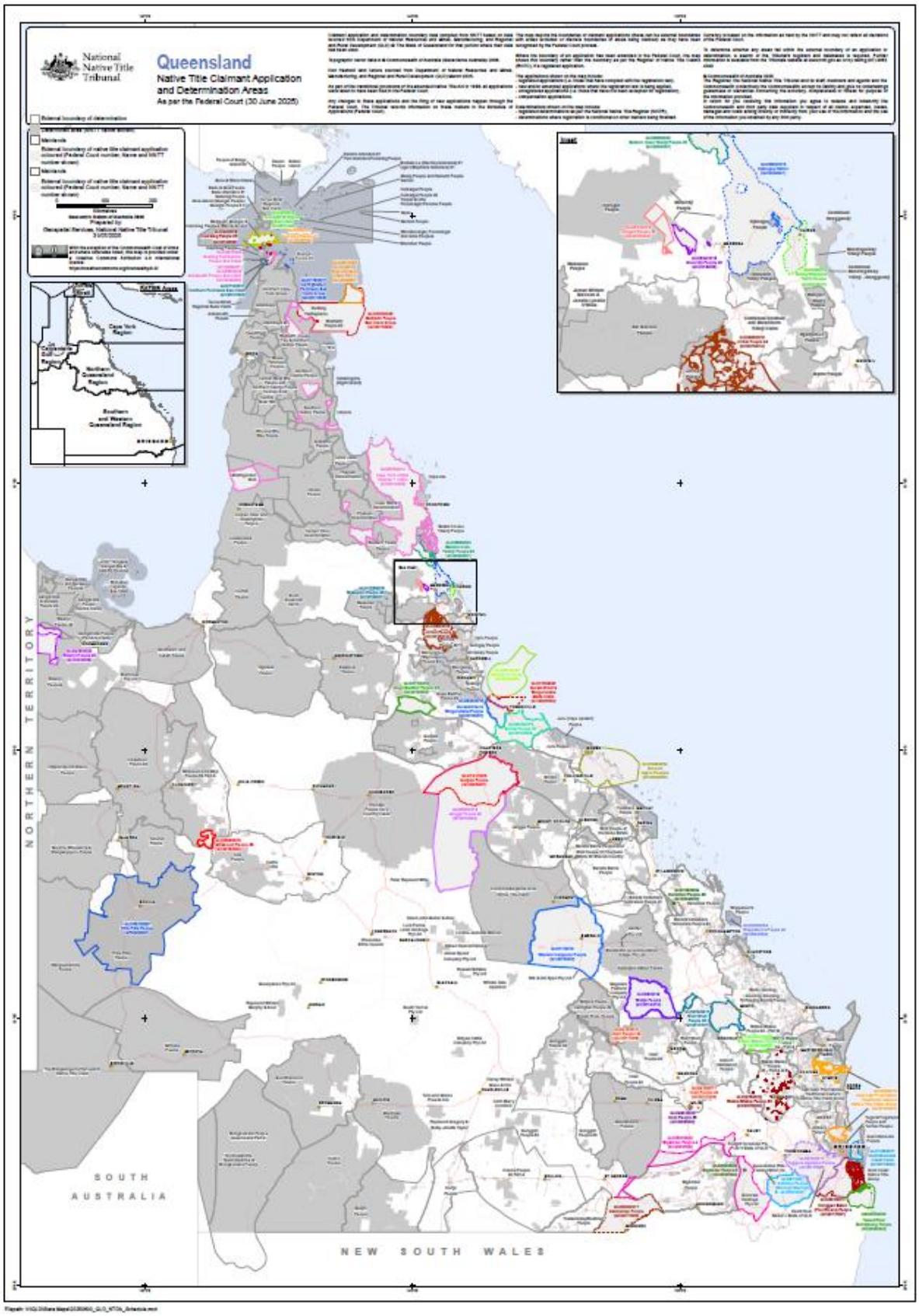


Figure 5-46: ILUAs within the State of Queensland (Source: NNTT, 2025)

5.6.1.7 Native Title

Native Title is the recognition of First Nations people's rights to their traditional lands and waters, recognised by law (Native Title Act 1993). First Nations groups can make a native title claim that claims they hold native title rights and interests in an area according to their traditional laws and customs. Only once a native title is granted, or determined, that First Nations group/s will have recognised rights to the area which are specific to each determination.

There are current Native Title determinations, with non-exclusive Native Title established, in areas of the Victorian, northern New South Wales, and southern Queensland coast, within the Environmental Sectors (Figure 5-47).

There are also further Native Title registered claims along sections of the coast within the Environmental Sectors (Figure 5-48)

Native Title Determination – Otway

In the Otway, existing native title includes:

- VCD2023/001 - Eastern Maar People. Eastern Maar Aboriginal Corporation Registered Native Title Body Corporate (RNTBC)
- VCD2011/001 - Gunditjmara & Eastern Maar. Gunditj Mirring Traditional Owners Aboriginal Corporation RNTBC, Eastern Maar Aboriginal Corporation RNTBC
- VCD2007/001 - Gunditjmara - Part A. Gunditj Mirring Traditional Owners Aboriginal Corporation RNTBC.

No existing South Australian Native Title determinations occur within the Otway Environmental Sector.

Native Title Determination – Bass Strait

In the Bass Strait Environmental Sector, existing native title includes:

- VCD2010/001 - Gunai/Kurnai People. Gunaikurnai Land & Waters Aboriginal Corporation RNTBC.
- VCD2023-001 - Eastern Maar People
- VCD2024/001 - Eastern Maar People
- **Native Title Determination – Gippsland**

In the Gippsland Environmental Sector, existing native title includes:

- VCD2010/001 - Gunai/Kurnai People. Gunaikurnai Land & Waters Aboriginal Corporation RNTBC.

Native Title Determination – NSW and Queensland

A large number of Native Title determinations held across the Environmental Sectors in NSW and Queensland with none held in Tasmania. These include:

- NCD2013/001 - Bandjalang People #1
- NCD2013/002 - Bandjalang People #2
- NCD2019/001 - Bundjalung People of Byron Bay #3
- NCD2019/001 - Bundjalung People of Byron Bay #3
- NCD2015/002 - Yaegl People #1
- NCD2015/003 - Yaegl People #2

- NCD2015/003 - Yaegl People #2
- NCD2017/003 - Yaegl People #2 (Part B)
- QCD2011/001 - Quandamooka People #1
- QCD2011/001 - Quandamooka People #1
- QCD2011/001 - Quandamooka People #1
- QCD2011/001 - Quandamooka People #1
- QCD2011/002 - Quandamooka People #2
- QCD2011/002 - Quandamooka People #2
- QCD2011/002 - Quandamooka People #2
- QCD2011/002 - Quandamooka People #2
- QCD2013/008 - Gold Coast Native Title Group
- QCD2014/015 - Butchulla People #2
- QCD2014/015 - Butchulla People #2
- QCD2015/001 - Yugara/Yugarapul People and Turrbal People
- QCD2017/010 - Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People
- QCD2019/007 - Quandamooka People #4
- QCD2019/007 - Quandamooka People #4
- QCD2019/007 - Quandamooka People #4
- QCD2019/008 - Butchulla People Land & Sea Claim #2
- QCD2019/008 - Butchulla People Land & Sea Claim #2
- QCD2024/002 - Kabi Kabi First Nation Traditional Owners Native Title Claim Group
- QCD2024/002 - Kabi Kabi First Nation Traditional Owners Native Title Claim Group.

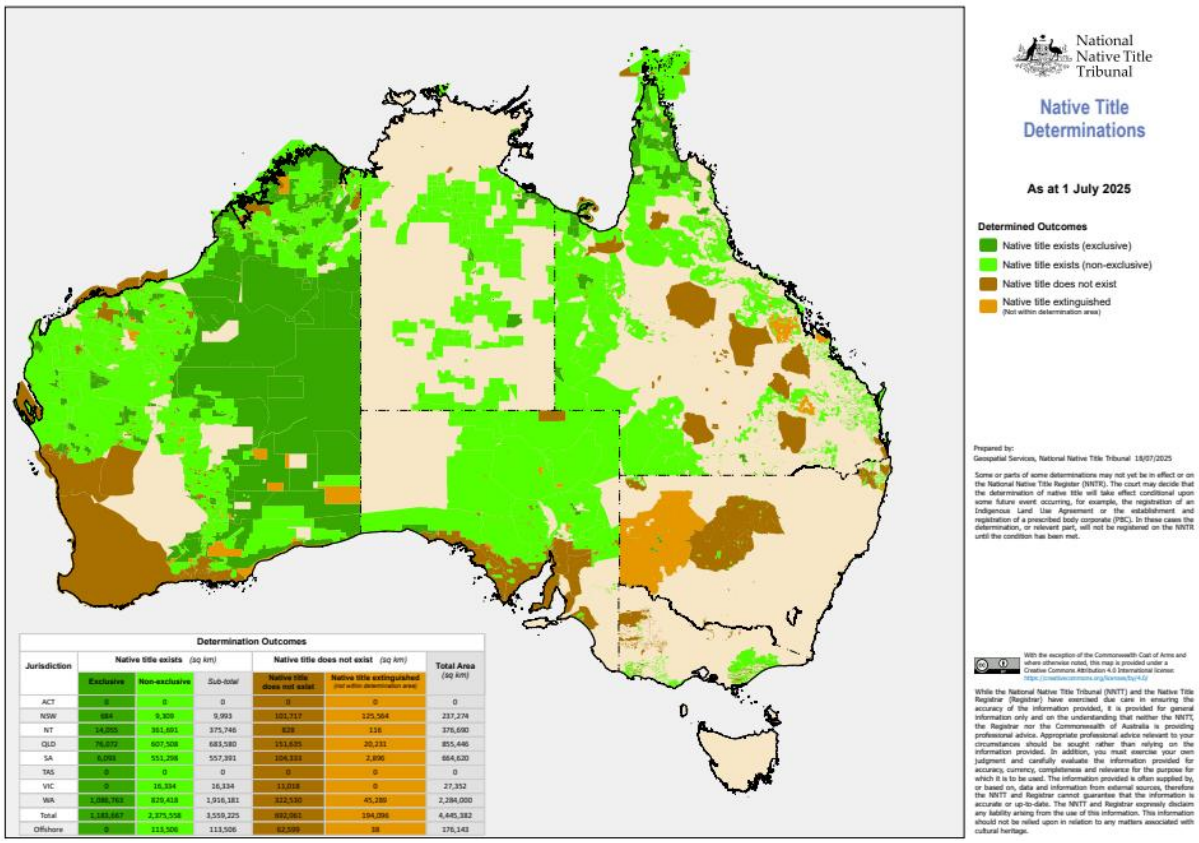


Figure 5-47: Native Title Determinations (Source: Map reproduced with the kind permission of NNTT, 2025)

Native Title Claims

There are also a number of Native Title claims along the coastal regions of South Australia, Victoria, NSW and Queensland. These include:

- SC2017/002 - First Nations of the South East - South Australian Native Title Services
- SC1998/004 - Ngarrindjeri and Others Native Title Claim
- VC2012/001 - Eastern Maar People
- VC2022/002 - Wadawurrung
- NC2017/003 - South Coast Peoples
- QC2018/007 - Kabi Kabi First Nation Traditional Owners Native Title Claim
- QC2017/007 - Danggan Balun (Five Rivers) People
- QC2017/004 - Quandamooka Coast Claim
- QC2017/007 - Danggan Balun (Five Rivers) People.
- It is also noted the Boonwurrung People (VID363/2020) native title claim over Wilsons Promontory has not been registered by the NNTT (ABMC, 2025).

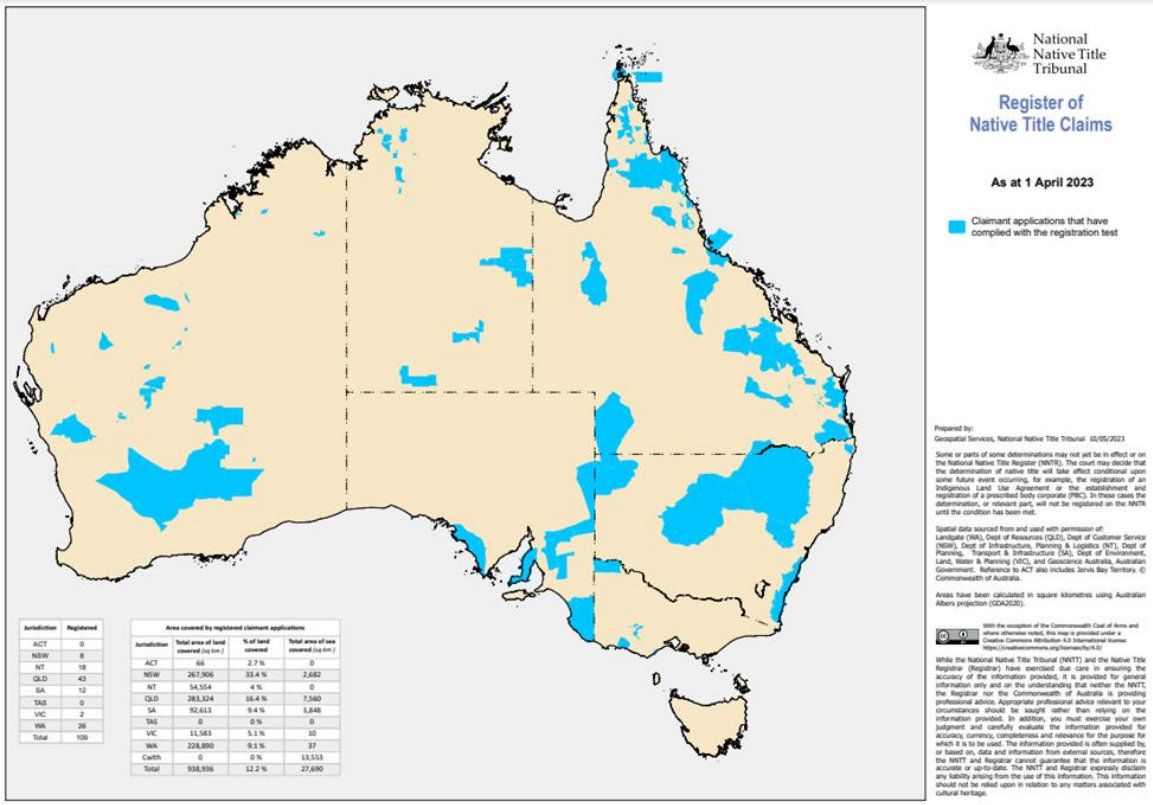


Figure 5-48: Native Title Registered Claims (Source: Map reproduced with the kind permission of the National Native Title Tribunal, 2023)

5.6.1.8 Indigenous Protected Areas (IPAs)

IPAs are a key element of Australia's National Reserve System (parks, reserves and protected areas) designed to protect the nation's biodiversity. IPAs protect cultural heritage, provide employment opportunities, education and training for Indigenous people. The program strengthens the conservation and protection of marine and coastal environments. On 7 May 2022 (DCCEEW, 2025) numerous sea country IPA consultation projects were announced to support Indigenous-led consultation with Traditional Owners and other stakeholders, management planning, and on-sea/on-land management with three of these included within the Otway, Bass Strait and Gippsland Environmental Sectors as shown in Figure 5-49.

Figure 5-49: Sea Country Indigenous Protected Areas Programs - Consultation Projects Source: (Source: DCCEEW, 2025)

Indigenous Protected Areas – Otway Environmental Sector

Indigenous land and sea management projects on coastal areas in the Otway Environmental Sector as shown by the National Indigenous Australians Agency include:

- Deen Maar IPA – sand dunes, limestone ridges, river, lake and wetlands proximate to Yambuk.

Indigenous Protected Areas – Gippsland Environmental Sector

Indigenous land and sea management projects on coastal areas in the Bass Strait Environmental Sector as shown by the National Indigenous Australians Agency include:

- Babel Island IPA – mutton bird rookery and cultural resource on the east of Flinders Island.
- Badger Island IPA – former indigenous community with current boxthorn control program west of Flinders Island.
- Great Dog Island IPA – mutton birding island south of Flinders Island.
- lungatalanana (Clarke Island) IPA – study of fire regrowth with strong links to the Tasmanian Aboriginal community.
- Mount Chappell Island IPA – mutton bird rookery with native revegetation and weed control west of Flinders Island.

Indigenous Protected Areas – Central NSW Environmental Sector

Indigenous land and sea management projects on coastal areas in the Central NSW Environmental Sector as shown by the National Indigenous Australians Agency include:

- Gumma IPA – diverse aquatic interface habitats south of Nambucca Heads on the north coast of NSW.

Indigenous Protected Areas – SE Queensland

Indigenous land and sea management projects on coastal areas in the SE Queensland Environmental Sector as shown by the National Indigenous Australians Agency include:

- Minyumai IPA – floodplain wetlands and rainforests in northern NSW.
- Ngunya Jargoon IPA – Wildlife corridors and refuge for biodiversity within a fragmented landscape on the northern coast of NSW.
- Guanaba IPA – Rainforest reserve located at the foot of Mount Tamborine near the Queensland-New South Wales border.

Indigenous Protected Areas – SE Tasmania

Indigenous land and sea management projects on coastal areas in the South-east Tasmania Environmental Sector as shown by the National Indigenous Australians Agency include:

- Risdon Cove and putalina IPA – cultural and spiritual sites for the Tasmanian aboriginal community either side of Hobart.

Indigenous Protected Areas – Sorell Environmental Sector

Indigenous land and sea management projects on coastal areas in the Sorell Environmental Sector as shown by the National Indigenous Australians Agency include:

- Preminghana IPA – 524 hectares of land in the north-west of Tasmania protecting historic Aboriginal engraving sites and the endangered Preminghana daisy.

In 2022, GlaWAC signed an agreement with the Federal Government to start the process of establishing a Sea Country IPA from Nanjet east of Wilsons Promontory, to Mallacoota, on the Vic/NSW Border.

5.6.1.9 Values and Sensitivities

The cultural features of the environment may include heritage sites, and values relating to First Nations people's traditional culture and customs (NOPSEMA, 2024). Values and sensitivities associated with cultural features of the environment have been identified based on the presence of heritage sites and First Nations people's values of Country in the Environmental Sectors.

First Nations cultural heritage values and sensitivities are defined as follows:

- Values are the core principles, concerns and goals that guide First Nations people's way of life (Victorian Aboriginal Heritage Council, 2021; Smyth and Bahrdt Consultants, 2004; Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023; Eastern Maar Aboriginal Corporation, 2014; Gunaikurnai Land and Waters Aboriginal Corporation, 2015).
- Sensitivities comprise objects and places or 'areas of cultural heritage sensitivity' herein termed heritage sites:
  - Objects as defined in the Burra Charter, are physical materials that contribute to the cultural significance of a place.
  - Places as defined in the Burra Charter, area geographically defined areas. They may include elements, objects, spaces and views. Place may have tangible (physical or material) and intangible (spiritual connection to place) dimensions.
  - 'Areas of cultural heritage sensitivity' are defined in the Victorian Aboriginal Heritage Regulations 2018 as landforms and soil types where First Nations cultural heritage places are more likely to be located (First Peoples – State Relations, 2021).

5.6.1.10 Cultural Features of the Environment related to First Nations People's Heritage Sites and Values

First Nations people are considered Amplitude Energy's primary source for identifying relevant First Nations cultural heritage sites and values. Consultation with First Nations organisations has informed identification of particular values and sensitivities, as well as consultation with First Nations peoples, participation in cultural experiences and training led by Gunditjmara Guide on Gunditjmara Country. Where direct communication has not been possible, publications produced by / in conjunction with First Nations people have been used as secondary sources.

Secondary sources include First Nations people Country Plans developed by RAPs that have application areas within the Environmental Sectors and The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (Australia ICOMOS Burra Charter, 2013).

First Nations cultural heritage values are as diverse as the Victorian First Nations groups themselves. The cultural features of the environment relating to First Nations people's intangible heritage values (including principles, concerns, responsibilities) proximal to Amplitude Energy's offshore title areas are described in Table 5-8. These values are specific to the Gunditj Mirring Traditional Owners Aboriginal Corporation (Gunditjmara), Eastern Maar Aboriginal Corporation (Eastern Maar), Gunaikurnai Land and Waters Aboriginal Corporation (Gunaikurnai), Wadawurrung Traditional Owners Aboriginal Corporation (Wadawurrung), and Bunurong Land Council Aboriginal Corporation (Bunurong).

Table 5-8: Cultural features of the environment relating to First Nations people's intangible heritage values proximal to Amplitude Energy Offshore Title Areas

Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	**Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values**	**Gunditjmara (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023)**	**Eastern Maar (Eastern Maar Aboriginal Corporation, 2014)**	**Gunaikurnai (Gunaikurnai Land and Waters Aboriginal Corporation, 2015)**	**Wadawurrung (Wadawurrung Traditional Owners Aboriginal Corporation, 2020)**	**Bunurong (Biosis 2023; Bunurong Land Council Aboriginal Corporation, 2024)**
Sea Country	RAPs have defined area boundaries which extend to coastal waters. However, Sea Country is considered to extend beyond the formally defined Registered Aboriginal Party (RAP) area to include sea and submerged lands to the edge of the continental shelf (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023; Eastern Maar Aboriginal Corporation, 2014; Gunaikurnai Land and Waters Aboriginal Corporation, 2015). Sea Country is an intrinsic value to First Nations people. It includes parts of open ocean, beaches, land and freshwater on the coast, habitats and	Defined as Nyamat Mirring, is a mosaic of private and public land with various governance and management arrangements. It is noted that the Gunditjmara view water as part of their traditional lands and believe it should be recognised and protected as such. Bonney Upwelling is a dominant feature of Country that supports many culturally significant species.	Defined as Sea Country, extends well beyond the current shoreline to the edge of the continental shelf. The oceans nourished Eastern Maar Ancestors and while this area is under the sea today, it was occupied for thousands of years and rising sea levels have not washed away the history, physical evidence, or connection. The Eastern Maar Country Plan describes the continued use of nearby coastal resources including collection of tucker such as abalone and crayfish.	The Gunaikurnai state "we see our land (Wurruk), waters (Yarnda), air (Watpootjan) and every living thing as one. All things come from Wurruk, Yarnda and Watpootjan and they are the spiritual life-giving resources, providing us with resources and forming the basis of our cultural practices". (Gunaikurnai Land and Waters Aboriginal Corporation, 2015). The Gunaikurnai are recognised as Traditional owners over ~1.33 M ha of Country from west Gippsland near Warragul, east to the	Wadawurrung Warre (Sea Country) includes Pt. Phillip Head and Pt. Addis Marine National Parks which extend along 9 km of Wadawurrung coastline. This area is east of Anglesea to Bells Beach abutting the Great Otway National Park. Barwon Bluff Marine Sanctuary, Pt. Lillias to Pt. Wilson to Kirk Pt, Wedge Point (Port Phillip coast) and Clifton Springs on the Bellarine Peninsula coast include saltmarshes and seagrass beds.	Within the bounds of the Bunurong RAP, there are a total of 677 registered shell midden sites, within two hundred meters of the shoreline (Biosis, 2023). This infers knowledgeable exploitation of marine resources and an understanding of Sea Country (Biosis, 2023).

Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Gunditjmara (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023)	Eastern Maar (Eastern Maar Aboriginal Corporation, 2014)	Gunaikurnai (Gunaikurnai Land and Waters Aboriginal Corporation, 2015)	Wadawurrung (Wadawurrung Traditional Owners Aboriginal Corporation, 2020)	Bunurong (Biosis 2023; Bunurong Land Council Aboriginal Corporation, 2024)
	encompasses all living things, beliefs, values, creation spirits and cultural obligations connected to an area (The University of Adelaide, 2023; Wadawurrung Traditional Owners Aboriginal Corporation, 2020).			Snowy River, north to the Great Dividing Range and out to 200 m offshore.		
Creation/ Dreaming sites, songlines, sacred sites and Ancestral beings	Stories and Songlines link First Nations people to ancestors, culture, and Country. Dreaming stories further reinforce the memories and Songlines relating to the flooding and significant connection to Sea Country. Dreamtime Songlines link tribal kings such as Umbarra or King Merriman to Wallaga Lake, and Borun the pelican who created Songlines and storylines	Deen Maar holds deep spiritual significance for Gunditjmara, as part of the creation story and a place where the spirits of our Ancestors rest.	Eastern Maar see Country as their spiritual homeland where peace, direction and purpose is found. Eastern Maar believe spirits reside in waterways and water bodies. Sites important for Dreaming include Deen Maar where Ancestors leave the earth.	Gunaikurnai creation story, of Borun (the pelican) and Tuk (the musk duck), explains the bonds to Country. Country provides spiritual nourishment to the Gunaikurnai.	Spirits connect Wadawurrung to Country and each other, which gives Wadawurrung ongoing respect for obligation to care for Country.	Country holds all stories of Bunurong Grandmothers and Grandfathers and spiritual connections to Country (Bunurong Land Council Aboriginal Corporation, 2024).

Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Gunditjmara (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023)	Eastern Maar (Eastern Maar Aboriginal Corporation, 2014)	Gunaikurnai (Gunaikurnai Land and Waters Aboriginal Corporation, 2015)	Wadawurrung (Wadawurrung Traditional Owners Aboriginal Corporation, 2020)	Bunurong (Biosis 2023; Bunurong Land Council Aboriginal Corporation, 2024)
	as he walked through Gunaikurnai Country. First Nations People maintain strong spiritual ties to Country. Spiritual connection to Country includes: how Country provides spiritual life-giving resources places where the spirits of Ancestors rest (Deen Maar) or where spirits reside including water bodies; where peace, direction and purpose originates (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023; Gunditj Mirring Traditional Owners Aboriginal Corporation – briefing and correspondence, 2024; Eastern Maar Aboriginal Corporation, 2014; Gunaikurnai Land and					

Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Gunditjmara (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023)	Eastern Maar (Eastern Maar Aboriginal Corporation, 2014)	Gunaikurnai (Gunaikurnai Land and Waters Aboriginal Corporation, 2015)	Wadawurrung (Wadawurrung Traditional Owners Aboriginal Corporation, 2020)	Bunurong (Biosis 2023; Bunurong Land Council Aboriginal Corporation, 2024)
	Waters Aboriginal Corporation, 2015).					
Cultural obligations to care for Country	First Nations People may be culturally obligated and inherently responsible to care, protect and heal Country for present and future generations (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023; Eastern Maar Aboriginal Corporation, 2014; Gunaikurnai Land and Waters Aboriginal Corporation, 2015). The roles held relating to taking care of Country and knowledge holding vary amongst individuals and within clans and family groups. Roles include taking care of culturally	Gunditjmara have responsibility in managing Kooyang (short-finned eel) habitats given short-finned eels hold an important place in the culture of Gunditjmara people. Protection of Karntubul (whale) species is paramount to Gunditjmara spiritual, physical wellbeing. Koorn Moorn (seals) feature in song and dance of Gunditjmara and are used as a food source. "Gunditjmara carry out our enduring responsibility to care	Eeling and the methods of eel farming taught by Eastern Maar Ancestors are still in use today. Eastern Maar have had responsibility to care for Country for thousands of years, so that Country can stay healthy and keep providing. Eastern Maar's goal in their Country Plan: "Our Country is healthy, and our natural resources are managed and used sustainably".	Gunaikurnai have cultural responsibility to ensure all Gunaikurnai land, waters, air and everything living as one is looked after. Gunaikurnai's whole-of-Country principles includes "It is our inherent responsibility to look after Country – to heal damage of the past and protect it for future generations".	Wadawurrung live by lore to care for Country and all things living as Wadawurrung ancestors have always done. It is Wadawurrung cultural obligation to look after Country. Sea Country values include kelp forests which provide habitat for food resources including rock lobster and abalone; and marine mammals including whales and seals.	Bunurong aims to preserve and protect the sacred lands and waterways of our ancestors, their places, traditional cultural practices, and stories (Bunurong Land Council Aboriginal Corporation, 2024).

Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Gunditjmara (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023)	Eastern Maar (Eastern Maar Aboriginal Corporation, 2014)	Gunaikurnai (Gunaikurnai Land and Waters Aboriginal Corporation, 2015)	Wadawurrung (Wadawurrung Traditional Owners Aboriginal Corporation, 2020)	Bunurong (Biosis 2023; Bunurong Land Council Aboriginal Corporation, 2024)
	significant species or habitats of significant species known to be important food resources, and culturally significant landscapes and places.	for Nyamat Mirring (Sea Country), so our children thrive, see their Country heal and know their stories." Gunditjmara's principles defined in their Country Plan: "Country is protected for present and future generations" and "Managing Country is a cultural responsibility".				
Knowledge Systems	First Nations peoples ecological, spiritual, traditional and cultural knowledge is passed through the generations using cultural practices (Dreaming stories, ceremony, song and dance) where knowledge holders (Elders) are the custodians of knowledge. This knowledge includes sea and landscape	Gunditjmara Elders and families need access to Country for events and Ceremonies which are critical for intergenerational knowledge sharing and cultural practice. Places critical for intergenerational knowledge sharing include:	Knowledge of the sacred sites and resources of Country, the values and stories associated with important places, languages and secret ceremonial practices have been passed from Eastern Maar Ancestors to Elders, to Eastern Maar young people.	Gunaikurnai Elders provide advice and guidance to the Gunaikurnai community and pass on cultural knowledge and practices. 10,000 years ago, Victoria was connected to Tasmania by a land bridge. At this time, the marine parks and reserves around	Wadawurrung Elders pass on knowledge to the next generation of Wadawurrung to look after Country and culture, spiritual and familial links with Country.	Wilsons Promontory area contains registered places including shell midden sites, Aboriginal Ancestral Remains Burial/Reinternment, which suggests the Wilsons Promontory area to be inhabited by Bunurong ancestors. Places critical for intergenerational

Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Gunditjmara (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023)	Eastern Maar (Eastern Maar Aboriginal Corporation, 2014)	Gunaikurnai (Gunaikurnai Land and Waters Aboriginal Corporation, 2015)	Wadawurrung (Wadawurrung Traditional Owners Aboriginal Corporation, 2020)	Bunurong (Biosis 2023; Bunurong Land Council Aboriginal Corporation, 2024)
	features that hold dreamtime and creation stories or are events and ceremonial places critical for intergenerational knowledge sharing and cultural practice. Knowledge holders have responsibility for traditions, observances, customs or beliefs associated with specific areas (Victorian Aboriginal Heritage Council, 2021a). In terms of potential environmental impacts to Country, cultural practices associated with years of observation of Country guides how Country is cared for and managed sustainably including incorporating contemporary scientific data into management of Country (Gunditj Mirring Traditional Owners	• The Convincing ground • Deen Maar • Discovery Bay Coastal Park	Places critical for intergenerational knowledge sharing include: • Deen Maar	Wilsons Promontory were terrestrial habitats, inhabited by our ancestors. Places critical for intergenerational knowledge sharing include: -Wilsons Promontory complex (Brataualung Country)		knowledge sharing include: • Wilsons Promontory

Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Gunditjmara (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023)	Eastern Maar (Eastern Maar Aboriginal Corporation, 2014)	Gunaikurnai (Gunaikurnai Land and Waters Aboriginal Corporation, 2015)	Wadawurrung (Wadawurrung Traditional Owners Aboriginal Corporation, 2020)	Bunurong (Biosis 2023; Bunurong Land Council Aboriginal Corporation, 2024)
	Aboriginal Corporation, 2023; Eastern Maar Aboriginal Corporation, 2014; Gunaikurnai Land and Waters Aboriginal Corporation, 2015).					
Connection to Country	First Nations people may maintain strong spiritual ties to Country. Spiritual connection to Country includes how Country provides spiritual life-giving resources for species and landscapes, places where the spirits of Ancestors rest (Deen Maar) or where spirits reside including water bodies; where peace, direction and purpose originate. If First Nations peoples cannot access areas of Sea Country that they typically do access, this may affect Traditional Owners connection to	"Our Nyamat Mirring (Sea Country) holds values that are fundamental to our wellbeing and benefit Gunditjmara and other people who live on Country. Our customary obligations to Country, Ceremony, our language (Wurrung), Lores, relationships, and identities as Gunditjmara are inter-connected with Nyamat Mirring (Sea Country)." (Gunditj Mirring Traditional Owners	"It is the way we feel, the way we live and the connection that holds and defines us. When the health of our Country declines, so does the health of our citizens – we are all inextricably linked. If our waters are polluted or lands degraded, we will feel unwell." (Eastern Maar Aboriginal Corporation, 2014)	"Our Country is the land, the rivers and the ocean, the people and the stories, the past and the future. All of it is connected. All of it is important to us. Country heals us and connects us to our ancestors, our culture and history. We can be healthy if our Country is looked after… Our mob cannot be healthy when our Country is sick…" (Gunaikurnai Land and Waters Aboriginal Corporation, 2015)	"We are connected to our land, our skies, our waterways, and our coastal areas, keeping them healthy keeps our People and Culture healthy." (Wadawurrung Traditional Owners Aboriginal Corporation, 2020)	Aboriginal communities in Victoria maintain strong connections to their traditional lands, waters and their cultures (Biosis, 2023).

Identified Cultural Features of the Environment relating to First Nations People's Heritage Sites and Values	Intrinsic link between Cultural Features and First Nations People's Heritage Sites and Values	Gunditjmara (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023)	Eastern Maar (Eastern Maar Aboriginal Corporation, 2014)	Gunaikurnai (Gunaikurnai Land and Waters Aboriginal Corporation, 2015)	Wadawurrung (Wadawurrung Traditional Owners Aboriginal Corporation, 2020)	Bunurong (Biosis 2023; Bunurong Land Council Aboriginal Corporation, 2024)
	Country. In the case of Deen Maar, access could be visual or physical access. (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023; Wadawurrung Traditional Owners Aboriginal Corporation, 2020; Eastern Maar Aboriginal Corporation, 2014; Gunaikurnai Land and Waters Aboriginal Corporation, 2015; Bunurong Land Council Aboriginal Corporation, 2024).	Aboriginal Corporation, 2023)				

First Nations People's Tangible Cultural Heritage and Habitats and species

Cultural features of the environment that are related to First Nations people's heritage sites (objects and places) include (PV, 2019):

- known coastal/ island places and objects
- known submerged sites
- ancestral remains
- middens
- Flaked stone tools, ground edge axes, axe-grinding grooves and griding stones.
- Historic and contemporary cultural harvesting of marine fauna and flora, i.e. eel and fish traps.
- Sea and landscape features that hold Songlines, Dreaming and Creation stories, such as offshore islands (Deen Maar) and lava flows. Associated evidence of habitation and connection.

Locations and landforms where Aboriginal burials may have been more likely to occur include sandy lunettes and alongside water, sand dunes near beaches, aboriginal middens, in bushland, near trees or rock shelters (Parks Victoria, 2019). Earth features include mounds, rings and hearths which are the result of First Nations people living in particular places of the landscape. Stone arrangements comprise a construct of stones of boulders resulting in a place of cultural significance and are usually found in volcanic areas of Victoria. These include stone houses, fish or eel traps, ceremonial arrangements and rockwells (Parks Victoria, 2019).

Middens are shell deposits that have built up over time, often as a result of Indigenous people gathering and eating shellfish and molluscs (Parks Victoria, 2019). They can be found near water sources throughout Victoria and may be present alongside bones, grinding stones, charcoal and ancestral remains (Parks Victoria, 2019). Coastal shell middens, charcoal and hearth stones from fires, and items such as bone and stone artefacts are typically located within sheltered positions in the dunes, coastal scrub and woodlands, within rock shelters or on exposed cliff tops with good vantage points (Aboriginal Victoria, 2008). Coastal shell middens are found as layers of shell exposed in the side of dunes, banks or cliff tops or as scatters of shell exposed on eroded surfaces. Threats to coastal shell middens include exposure by wind and water erosion; degradation by human or animal interference; burrowing animals; people destabilizing ground using unregulated tracks or off-road vehicles.

Stone tools are flakes of stone shaped into tools such as scrapers, blades or spears. These are found everywhere across Victoria and were made in many forms from many types of stone. Ground edge axes are stone axe-heads made from large flakes of hard stone. Axe-grinding grooves occur from the sharpening and shaping of stones axes along stone platforms or outcrops. They can be found in many places across Victoria, especially near water. Griding stones are large slabs of abrasive rocks often left at camps. used (Parks Victoria, 2019).

Within their Sea Country Plan, and during consultation, GMTOAC shared stories of the creation of significant landscape features such as the Tyrendarra lava flow associated with the World Heritage listed Budge Bim aquaculture system (GMTOAC, 2023). This lava flow begins at Mt Eccles and extends across coastal plains and offshore 5-10 km to the east of Portland at Julia Reef (Builth, 2004). Julia Reef is a popular spot for recreational fishing, particularly yellowtail kingfish (VFA, 2022)

The potential for intangible sites such as lava flows within Amplitude Energy's operated offshore Otway acreage was investigated by evaluating high-quality 3D seismic imagery. The review of 3D seismic imagery has indicated there is no geological evidence of volcanic or hydrothermal flow

events within the sedimentary record of the past 500,000 years within Amplitude Energy's operated offshore Otway acreage. Several crater complexes and lava flows are present within the greater onshore region, however, are unlikely to extend into the Amplitude Energy acreage. Their mapped limits are at least 40 km from the nearest boundary of Amplitude Energy's offshore acreage.

Known tangible sites are generally constrained to the shoreline and near shore limits, within state coastal waters (ACHRIS, 2023). In 2023, ConocoPhillips commissioned Biosis to develop an Otway Exploration Cultural heritage desktop assessment (Biosis, 2023). The study area for the Otway Exploration Cultural heritage desktop assessment is highly representative of the Victorian coastline and is therefore used to provide details on tangible First Nations cultural heritage sites across Victoria. The desktop assessment included a search of the Victorian Aboriginal Heritage Register undertaken by Biosis on the 21 December 2022 which identified 5,636 recorded Aboriginal places across the Victorian coastline (Biosis, 2023). The dominant Aboriginal places located in the study area are shell middens (46.82%), artefact scatters (39.21%) and low-density artefact distribution (LDADs) (5.70%).

Review of the 5,636 recorded Aboriginal places found 5 First Nations cultural heritage places within Victoria that are significantly mentioned within relevant Country Plans:

- The Convincing Ground
- Deen Maar
- Discovery Bay Coastal Park
- Land Bridge and Submerged Landscapes
- Wilsons Promontory.

The Convincing Ground

The 'Convincing Ground' in Allestree at Portland Bay, approximately 10 km from Portland, is a significant site of early conflict on Gunditjmara Country (Biosis, 2023). Whalers and sealers visited Gunditjmara shores as early as 1810 leading to the establishment of one of Victoria's first whaling stations in Portland in 1829. Conflict arose when a whale beached at the site. The Kilcarer Gunditj clan gathered at the beached whale and whalers used the gathering to murder approximately 60 people, leaving only 2 surviving members of the clan. The exact date of the massacre is unknown but is estimated to have occurred between 1832 and 1833 (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023). This conflict may be the first recorded massacre of First Nations people. It is believed that the Convincing Ground will always hold the spirits of the Kilcarer Gunditj who were murdered there and as such is considered deeply significant for the Gunditjmara and other clans throughout south-west Victoria (Victorian Heritage Database, 2006). Prior to the arrival of settlers, the site of the Convincing Ground held social values for association with Country as a place where Gunditjmara would gather and feast (Heritage Council Victoria, 2010).

In 2006 the site was officially listed as a Heritage Place on the Victorian Heritage Register (VHR #H2079). Several land parcels at the site have since been returned to the Gunditjmara with an aim of creating a landscape for the space which adequately reflects the significance for the area. The Convincing Ground remains a place of ceremony for the Gunditjmara who gather at the site annually to reflect on the ongoing impacts of colonisation on their people (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023).

Deen Maar

Deen Maar Island holds deep significance for the Gunditjmara and Eastern Maar peoples, who jointly hold native title to the island and its surrounding waters (see Section 5.6.1.7).

The site is featured in the Gunditjmara creation story and is significant both spiritually and ecologically. As such, the site is considered a priority Nyamat Mirring location. Deen Maar is considered a dreaming place for the Gunditjmara as a resting place for the spirits of their Ancestors. As an island, Deen Maar connects Sea Country with other types of Country while hosting abundant resources of fish and coastal vegetation and is regarded as a place for Gunditjmara to access and practice culture (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023).

On the coast opposite Deen Maar, a cave 'Tarn Weerreeng' marks a path between Deen Maar and the mainland and serves as a burial place where bodies are wrapped in grass and placed inside the cave. When the grass is found at the mouth of Tarn Weerreeng, the body and its belongings are thought to have been carried to Deen Maar and the spirit carried to the clouds (Biosis, 2023; DTP, 2021).

The Eastern Maar often bury their people facing Deen Maar with the belief that after death, their spirits go to Deen Maar before going to the stars, as Bunjil had done (Eastern Maar Aboriginal Corporation, 2014).

Discovery Bay Coastal Park

Discovery Bay is an example of the continuous, connected landscape between Nyamat Mirring and Gunditjmara Country. The dune systems of Discovery Bay hold numerous cultural heritage sites such as middens which are under increasing threat from vehicle disturbance, including those associated with the commercial and recreational pipi fishery as well as recreational 4WDs. The remoteness of the area poses a challenge in protecting the area by making surveillance difficult and possibly lowering the level of compliance with regulations (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023).

Discovery Bay Coastal Park is currently managed by Parks Victoria with an aim to establish a governance model enabling Gunditjmara to lead management as a priority Nyamat Mirring location (Gunditj Mirring Traditional Owners Aboriginal Corporation, 2023).

Further details on the ecological and tourism values of Discovery Bay are provided in Appendix 2.

Land Bridge and Submerged landscapes

Between ~18,000 and ~12,000 years ago, the Bassian Land Bridge joined Tasmania with the mainland of Australia during periods of low sea level and potentially facilitated mass movement of Tasmanian Aboriginal (Palawa) people between these regions (Figure 5-50; Adeleye et al., 2021; Hamacher et al., 2023). It is estimated that rising sea levels at the end of the Ice Age (~14,000 years ago) flooded most of the Bassian Land Bridge, leaving the shallowest crossing readily passable on foot in an area east of Wilsons Promontory in Victoria and north of Hogan Island (located outside of the Otway Basin, in the Bass Strait). Based on bathymetric and topographic data of the land and seafloor of the Bass Strait, ~12,000 years ago, the Bassian Land Bridge was estimated to be completely submerged.

The original surface of the Land Bridge is likely to have been eroded and removed, with any remaining artefacts likely buried beneath sediment deep below the ocean (Biosis, 2023). Rising sea levels following the last glacial maximum and the known sea states of the Otway Coast (water depths and velocities) would make preservation of any "recently" buried anthropogenic structures or sites highly unlikely.

The area of the Land Bridge is also culturally significant to the Gunaikurnai peoples particularly as a place of intergenerational knowledge sharing (Gunaikurnai Land and Waters Aboriginal Corporation, 2015;). Dreaming stories further reinforce the memories and Songlines relating to the flooding and significant connection to Sea Country (Biosis, 2023; Nunn and Reid, 2016). These stories also serve as

a testament to the longevity and significance of oral tradition in a global context (Nunn and Reid, 2016).

Within their Sea Country Plan, and during consultation, GMTOAC shared stories of the creation of significant landscape features such as the Tyrendarra lava flow associated with the World Heritage listed Budge Bim aquaculture system (GMTOAC, 2023). This lava flow begins at Mt Eccles and extends across coastal plains and offshore 5-10 km to the east of Portland at Julia Reef (Builth, 2004). Julia Reef is a popular spot for recreational fishing, particularly yellowtail kingfish (VFA, 2022)

Known cultural heritage sites are generally constrained to the shoreline and near shore limits, within state coastal waters (ACHRIS, 2023). Evaluation of high-quality 3D seismic imagery has indicated there is no geological evidence of volcanic or hydrothermal flow events within the sedimentary record of the past 500,000 years within Amplitude Energy's operated offshore Otway acreage. Several crater complexes and lava flows are present within the greater onshore region, however, are unlikely to extend into the Amplitude Energy acreage. Their mapped limits are at least 40 km from the nearest boundary of Amplitude Energy's offshore acreage.

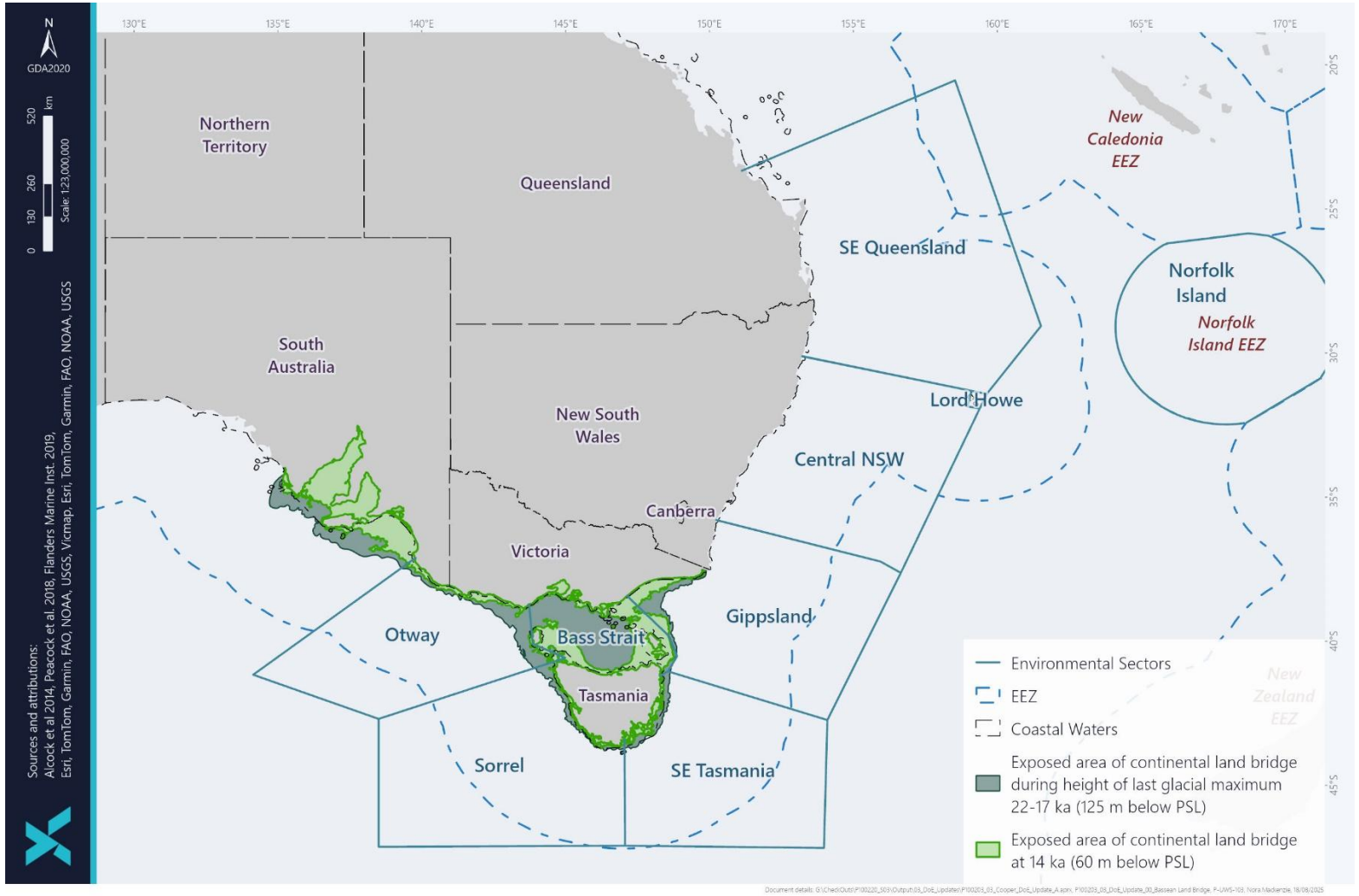


Figure 5-50: Exposed Area of Continental Land Bridge

Wilsons Promontory

According to the Victorian Aboriginal Heritage Register, the area of Wilsons Promontory contains 384 registered sites which are predominantly comprised of shell middens, artefact scatters and earth features (Biosis, 2023). Shell middens are scattered along the coast or otherwise near flowing water, with the largest cluster totalling 163 middens occurring along the western coast of the Promontory. Artefact scatter sites primarily follow water sources inland (Biosis, 2023).

Wilsons Promontory is also significant as a place of passing on cultural knowledge and practices and is thought to be a critical place for intergenerational knowledge sharing for the Gunaikurnai and Bunurong peoples.

Gunaikurnai inhabited the area of Wilsons Promontory from at least 6,500 years ago including what were previously terrestrial habitats prior to the inundation of the Bassian Land Bridge. A spirit called Loän (or Kŭlŭngrŭk) protected its inhabitants from invasions. Prior to sea level rise, Gunaikurnai would have hunted and gathered terrestrial and aquatic animals, fruits, yams and eggs according to seasonal abundance. Bark canoes were used to harvest fish and travel around the area once the sea level rise began (Gunaikurnai Land and Waters Aboriginal Corporation, 2015).

The modern-day terrestrial and marine protected areas of Wilsons Promontory recognise the significant natural and cultural values of the area. The Gunaikurnai aim to propose alternative management models to improve natural and cultural outcomes while providing benefits to Gunaikurnai people (Gunaikurnai Land and Waters Aboriginal Corporation, 2015). Further information regarding the ecological and tourism values of Wilsons Promontory is provided in Appendix 1.

Habitats and species relevant to First Nations people's sites and values include:

- Culturally significant species such as different marine and avian species that hold deep connections to lore and represent ancestors, spiritual emblems or totems:
  - Cetaceans: Karntubul (whales) in Sea Country hold deep cultural significance to the Gunditjmara and feature in Dreaming stories, ceremony, song and dance traditions. Whale migration is associated with the belief that whales are ancestors to some First Nations peoples and arrive to the coast, annually. Key whale species which would relate to 'calling in' are the southern right whale, which reproduce close to shore, and are often observable from shore. Multiple whale species have the potential to beach in the region, including, though not limited to the southern right whale, pygmy blue whale, and humpback whale. Whale beaching events may be of significance to First Nations people, as parts of deceased whales were, and can still be used as a resource. Multiple whale species have the potential to beach in the region, including, though not limited to the southern right whale, pygmy blue whale, and humpback whale.
  - Pinnipeds: Koorn Moorn (seals) are culturally significant for Gunditjmara people. They feature in song and dance and were collected as a food resource in traditional times by Gunditjmara women along the coast. The Australian sea-lion, southern elephant seal, New-Zealand fur seal, and Australian fur seal are known to occur within the Environmental Sectors including a large colony of Fur Seals at Deen Maar Island that haul out on the island's rocky shores.
  - Seabirds: Different avian species hold deep connections to lore and represent spiritual emblems or totems. Magpie gees and Cape Barren geese were harvested for food from wetland habitats. Wetland habitat loss has reduced numbers of these species and harvesting not permitted in Victoria.
- Species that are food resources include:

  - Shellfish such as mussels and oysters located in rocky shorelines and marine/coastal wetlands (Section 3.1and Appendix 2 -).
  - Crustaceans such as crayfish and yabbies located in marine/coastal wetlands (Appendix 2 -).
  - Fish such as the short-finned eel used as a food resource (Section 3.14).
  - GMTOAC have highlighted short-finned eels (Kooyang) as of particular significance to Gunditjmara people, who developed complex aquaculture systems to trap and store eels. The aquaculture systems were engineered from the volcanic formations associated with the Tyrendarra Lava flow to create Budj Bim. The eels which are a valued source of food, were captured, fattened up, harvested, smoked and traded, and continue to hold cultural significance for Gunditjmara. Today there are cultural tours at Budj Bim, run by Gunditjmara peoples. The short-finned eel species migrates through State waters and Commonwealth Marine Area of the Otway Region between freshwater systems in Victoria including within Gunditjmara Country, to / from spawning grounds in the Coral Sea, thousands of km to the north. Based on the observed migratory route of short-finned eels, short-finned eels in adult and glass eel forms may pass the Gippsland, Otway, and Bass Strait Environmental Sectors during seasonal migrations. During late summer and autumn adult eels will enter the Otway Basin and Bass Strait to commence their migration to the Coral Sea. During mid-winter to late spring, the short-finned eel in larvae and glass eel forms will enter Victorian estuaries to complete the upstream migration. Upon entering the marine environment, eels disperse widely; individuals' migratory paths are known to diverge widely, and timing of arrival in the Coral Sea is also variable.

- Key Ecological Feature (Section 4.6): The Bonney Upwelling is a dominant feature of this region and brings cold nutrient water to the surface which feeds phytoplankton and sustains the food web and is of significance to the Gunditj Mirring people (Section 4.6). The Bonney upwelling is a large-scale oceanographic system and key ecological feature that influences the Otway coast (Appendix 3); the feature is active in Autumn and Summer depending on the strength and frequency of alongshore winds (Butler et al., 2002). The area is significant as one of the largest and most predictable upwellings in south-eastern Australia, and most prominent upwelling system driven by prevailing south-easterly winds.
- Water quality (Section 2.0): Water including freshwater and marine, may be 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 Country and each other. First Nations communities in Victoria may maintain strong connections to water and culture. Increased pollution from coastal communities, agriculture and industry, changes sea hydrology and impacts marine species and harms Country. Water is an intrinsic value to First Nations people.
- Benthic habitats (Section 3.6): Nearshore reefs provide habitat for many culturally significant species such as macroalgal communities, fish, sharks and rays. Julia Reef is within sea country adjacent to Gunditj Mirring RAP and is an extension of the volcanic feature connected to Budj Bim. Julia Reef marks the seaward extent of the Tyrendarra lava flow, ending approximately 15 km offshore and 10-15km east of Portland (Builth, 2004). Julia Reef is a preferred fishing spot for recreational fishers (VFA, 2022).
- Intertidal communities and shorelines (Section 3.3, Appendix 1 and Appendix 2): Intertidal communities and shorelines include mangroves, macroalgae, seagrass, coastal saltmarsh, rocky and sandy shorelines. Intertidal reefs and sandy shorelines are important cultural heritage sites and are important habitats for marine fauna and culturally significant species such as seabirds

and migratory shorebirds, fish, sharks, rays, eels, and pinnipeds. Sea Country for Wadawurrung people includes coastal habitats such as seagrass and saltmarsh.

- Australian Marine Parks, wetlands, and State parks and reserves (Sections 4.3.1, 4.4, and 4.5): The nearby First Nations people residents have strong cultural associations with Sea Country and may have cultural responsibilities of the waters and Marine Parks and Reserves that are located within Country. Some First Nations groups including the Gunaikurnai people have joint management over the Marine Parks and reserves within Country. Marine parks and reserves around Wilsons Promontory and Ninety Mile Beach National Park were inhabited Gunaikurnai ancestors. Marengo Reef Marine Park holds cultural significance for the Eastern Maar people. The marine park includes rocky features with high structural diversity, and provides for numerous filter-feeding organisms, such as tube worms and barnacles, and are surrounded by bull kelp. Islands within the park are known as a haul out site for fur seals. Wadawurrung Country covers the Avalon Coastal reserve.

5.6.1.11 Registered Heritage Findings

Interrogation of registers associated with Aboriginal cultural heritage sites, objects and intangible underwater cultural heritage was undertaken in 2025. The findings (ABMC, 2025) included:

- Victoria: The Victorian Aboriginal Heritage Register is not publicly accessible. Access had been requested, with no results of that search forthcoming at the time of writing.
- Tasmania: Results from a search of the Tasmanian Aboriginal Heritage Register identified records of approximately 500 sites on Flinders Island and the west coast of Tasmania. These consisted of shell middens, rock shelters, hut depressions, rock markings, stone arrangements, artefact scatters and isolated artefacts.
- South Australia: Results from the search of Register of Aboriginal Sites and Objects revealed 21 Aboriginal sites as significant or potentially significant.
- New South Wales: Results from the search of the Aboriginal Heritage Information Management Systems identified 105 Aboriginal sites and places. 103 of these were of an archaeological nature, with the remaining two (both associated with Barunguba (Montague Island) off Narooma), relating to the island's importance as a ceremonial, teaching and food-gathering site for the Yuin People.

This is not an exhaustive record of cultural heritage locations as First Nations Peoples may choose to not register certain heritage sites.

5.6.2 Maritime Heritage

In Australia, sunken aircraft, wrecks (>75 years old) and other underwater cultural heritage is protected within waters inside or outside Australian waters under the *Underwater Cultural Heritage Act 2018* (Cth). The Act is administered in collaboration between the Commonwealth and the States, Northern Territory and Norfolk Island.

No historic shipwrecks were identified on the Australian National Shipwreck Database (DEE, 2017x) within VIC/L24, VIC/P44, VIC/L23, VIC/RL16 or VIC/L32. However, the database indicates lists the coordinates of the Barque shipwreck as being located within VIC/RL13. Further consultation with DAWE in 2020 (as part of the BMG closure project) resolved that the resting location of the Barque is unknown. The closest known historic shipwrecks within the Gippsland Environmental Sector are:

- VIC/L23 (Sole): approximately 29 km southwest to S.S Selje

- VIC/RL16 (Patricia Baleen pipeline): approximately 7 km south to Anne and Mary and, 9 km north to Level Lass
- VIC/L32 (Sole) approximately 15 km southwest to Commissioner
- VIC/RL13 (BMG): approximately 20 km southeast to Level Lass, and 28 km northwest to AHO 6528 – Unknown.

The western Victorian coastline is known as the 'Shipwreck Coast' due to the number of wrecks present with most wrecked during the late nineteenth century. The strong waves, rocky reefs and cliffs of the region contributed to the loss of these ships. The wrecks represent significant archaeological, educational and recreational (i.e., diving) opportunities for tourism and local enjoyment.

One shipwreck <75 years old, Alfred (ID 11052) is identified as proximal to Amplitude Energy assets (VIC/P76) within the Otway Environmental Sector:

- Latitude: -38.68
- Longitude: 142.79

However, these listed coordinates for Alfred are incorrect; the Alfred is a small lighter wreck that was purposely scuttled to form a jetty at Middle Island Light station (DCCEEW, 2024q), approximately 40km ENE of the location given within the Cultural Heritage Database. Coordinates of heritage listed within the Australasian Underwater Cultural Heritage Database are not necessarily the known coordinates. The actual location of the heritage may be some distance from the location attributed on the heritage database.

Additional known historic shipwrecks within proximity to the Amplitude Energy Otway permits include:

- VIC/L24 (Casino): approximately 16 km west to S.S Selje, and 16 km to south of several shipwrecks off Peterborough coast.

Numerous shipwrecks records exist across the Environmental Sectors (Figure 5-51 and Figure 5-52). Some historic shipwrecks lie within protected or no-entry zones. These zones cover an area around a wreck site, ensures that a fragile or sensitive historic shipwreck is actively managed. Seven of these protected zones do occur within inshore coastal waters of the Environmental Sectors (Figure 5-52).

The search resulted in the identification of a handful of submerged aircrafts and a large number of historic (>75 years) and non-historic (<75 years) shipwrecks, within the Bass Strait and Gippsland Environmental Sectors (Figure 5-51).

However, coordinates of heritage listed within the Australasian Underwater Cultural Heritage Database are not necessarily the known coordinates. Where records are incomplete, general coordinates are assigned which may give a nominal location within the region (e.g., where the ship was last observed or understood to be sailing through or to). As in the case of the Alfred, the actual location of the heritage may be some distance from the location attributed on the heritage database.

For conservation, management or public safety reasons certain shipwrecks within Australia have additional protection zones than that established under the Underwater Cultural Heritage Act 2018 (Cth). Those within the Bass Strait Environmental Sector include:

- SS Glenelg (1900) – 500 m radius
- Clonmel (1841) – 50 m radius

- SS Alert (1893) – 500 m radius (DCCEEW, 2021d).

Additional known historic shipwrecks within the Gippsland Environmental Sector include:

- SS Federal (1901) – 800 m radius.

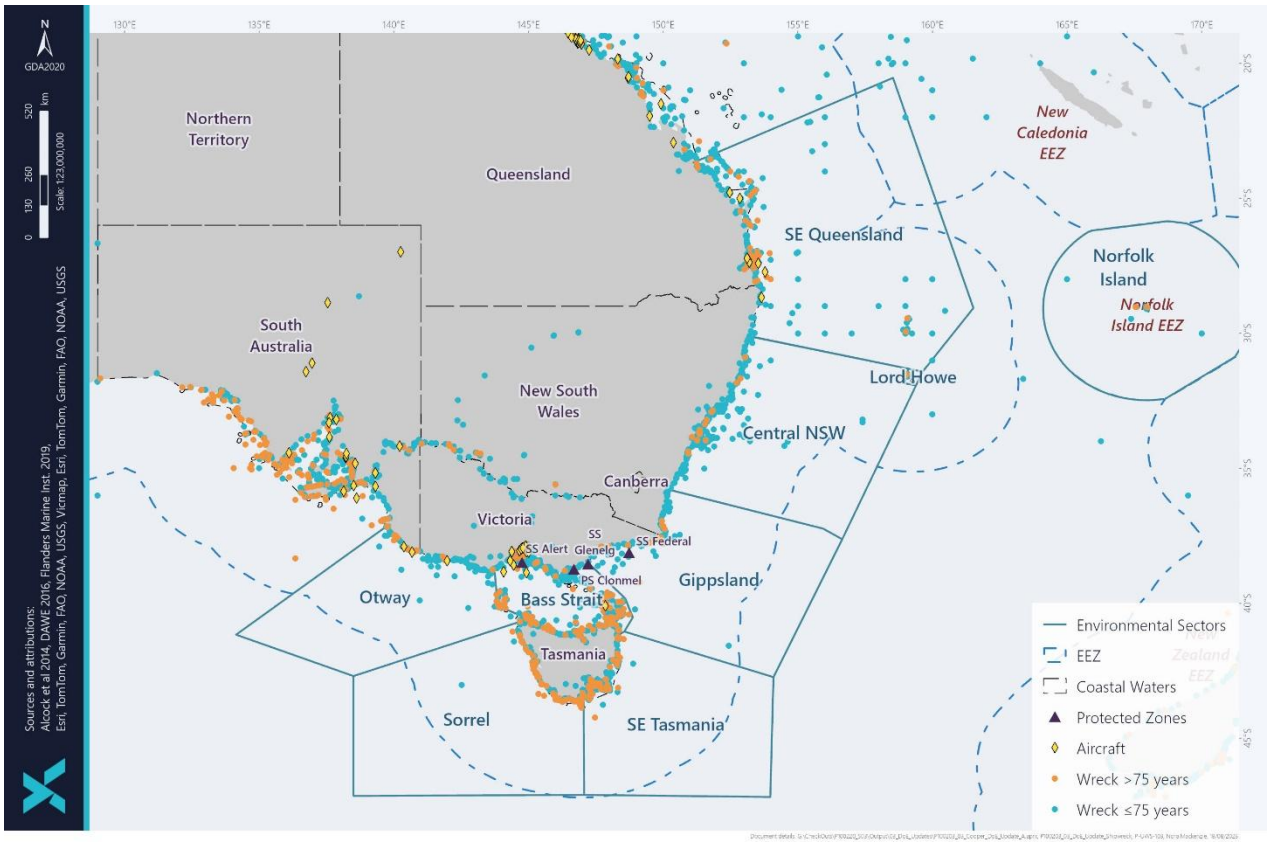


Figure 5-51: Locations of Historic Shipwrecks within the Environmental Sectors

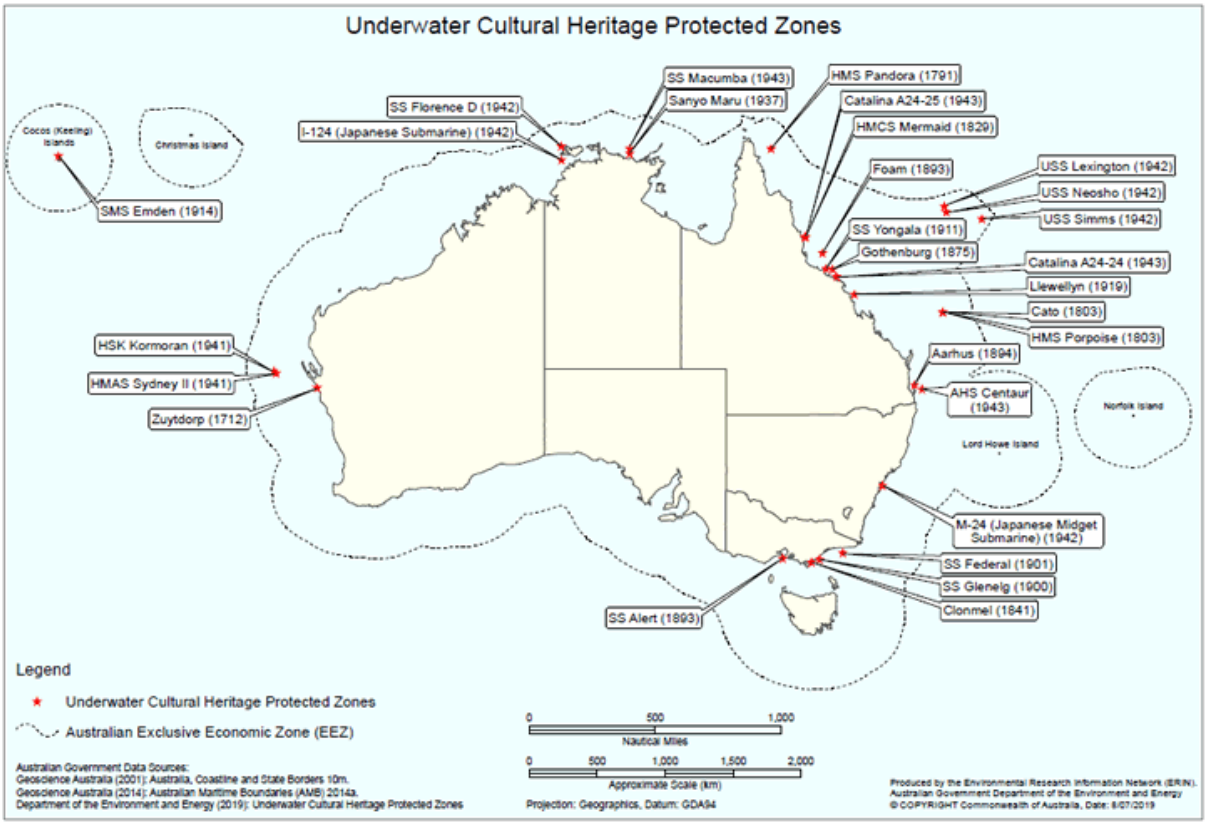


Figure 5-52: Commonwealth Historic Shipwrecks with Protected Zones (Source: CoA, 2019)

5.6.3 Heritage Places

Commonwealth heritage places are owned or controlled by the Australian Government that are of Indigenous, historic or natural heritage. Places may also be connected to defence, maritime safety, communications, customs or other government activities that reflect Australia's development as a nation. Several Commonwealth Heritage Places are located along the coastline and nearshore waters of Victoria, Tasmania, NSW and South Australia.

There are 30 Commonwealth Heritage Places, and 24 National Heritage places with a marine or coastal interface boundary located within the Environmental Sectors (Table 5-9). This includes places that have been listed for natural, historic and indigenous features. One Commonwealth Historic Listed Place, the Arched Building, Longridge is located within the Norfolk Island Environmental Sector. However, this Listed Place has been excluded as the boundary of this Listed Place does not intersect marine or coastal areas.

Listed World Heritage Properties are described in Section 4.1.

Table 5-9: Heritage Places with Coastal Interfaces Within the Environmental Sectors (DCCEEW, 2025f)

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Commonwealth Heritage Places										
Admiralty House Garden and Fortifications	Admiralty House Garden and Fortification is historically and culturally significant as the long-term Sydney residence of the Governor General, formerly home to Royal Navy Commanders-in-Chief and prominent private owners. The garden, with its 19th-century design, notable plantings, and fortifications, provides an important visual landmark on Sydney Harbour. It holds aesthetic value through its harbour views and complementary setting to the Italianate residence, and social value as a venue for official and public functions. The associated Kirribilli Point barracks and battery, built in the 1850s, are a rare surviving example of mid-19th century harbour defences, adding to the site's historic importance. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Aesthetic characteristics, Social Value, Significant People.						✓			
Beecroft Peninsula	The Beecroft Peninsula is the best example of a Permian cliffed coast in New South Wales. The area supports a high diversity of vegetation types within a small area including mangroves, saltmarsh, freshwater swamps, heathland, eucalypt forest and subtropical and littoral rainforest. Beecroft Peninsula retains the largest area of heath remaining on the south coast of New South Wales. This floristically rich vegetation provides important habitat for a variety of bird species, including the vulnerable ground parrot. Beecroft Peninsula occurs near the southern boundary of the Hawkesbury Sandstone geological unit. Accordingly, the place has a high number of flora and fauna species at the limit of their distribution. • Listed: 2004						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	• Class: Natural • Criterion: Processes, Rarity, Research, Characteristic values, Aesthetic characteristics • Other: includes indigenous heritage areas at Crocodile Head and Currarong Rock shelters.									
Cascade Reserve	Cascade Reserve is historically significant as one of Norfolk Island's first European landing sites, established in 1788, and as the location of Phillipsburgh village during the First Settlement period. It was central to early flax production, agriculture, and trade, later serving as a key landing and watering place for ships. The Reserve also retains archaeological evidence from both convict settlement periods (1788–1814 and 1825–1855). Particularly around Cascade Creek, roads, and the jetty area. It holds social value for the Norfolk Island community as a place of connection, recreation, and heritage, with significant features including the jetty area, former whaling station, Cascade Creek, waterfalls, and lookouts. • Listed: 2022 • Class: Historic • Criterion: Processes, Research, Social Value.									✓
Chowder Bay Barracks Group	Chowder Bay Barracks Group, built in the early 1890s, is a highly significant military complex associated with Sydney Harbour's late 19th-century defences and the Submarine Mining Corps, which introduced advanced military technology and the earliest use of electricity in defence. The site retains rare and possibly unique features, including an extant mine laboratory, and is the only depot of its kind in NSW. Its buildings, workshops, magazines, and other structures demonstrate the character of a submarine mining depot, with original fabric contributing to its heritage value. The place is also significant for its association with defence experts Sir William Jervois and Lt Col Peter Scratchley and remains a distinctive maritime landmark on Sydney Harbour. • Listed: 2004						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	• Class: Historic • Criterion: Processes, Rarity, Characteristic Values, Aesthetic Characteristics, Technical Achievement, Significant People.									
Crocodile Head Area	This site is located on Beecroft Peninsula near Crocodile Head and is listed within the Beecroft Peninsula Commonwealth Heritage Property. • Listed: 2004 • Class: Indigenous.						✓			
Defence site - Georges Heights and Middle Head	The Defence Site at Middle Head and Georges Heights is of outstanding heritage significance for its long history of Aboriginal occupation, its central role in the defence of Sydney Harbour from the early 19th century to the 1960s, and its contribution to the cultural landscapes of Sydney Harbour. The area contains a wide range of defence-related sites, structures and complexes including barracks, fortifications, gun batteries, housing and naval facilities which illustrate the evolution of military technology, strategy and training in Australia under Imperial, Colonial and Commonwealth policies. It is associated with key figures such as Sir William Jervois, Lt Col Peter Scratchley, Lt Col J Gordon and Colonial Architect James Barnet, and retains rare and innovative features including submarine mining facilities and early examples of camouflage. The headland also has strong social and aesthetic values, forming part of the iconic Sydney Harbour foreshores, valued for its scenic landscapes, recreational use, and symbolic importance in Sydney's cultural identity. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Research, Characteristic Values, Aesthetic Values, Technical Achievement, Social Value, Significant People, Indigenous Tradition.						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Fort Queenscliff	Fort Queenscliff, established from 1860, is of outstanding historical significance as the first and principal defence site for Port Phillip Bay and a command centre for surrounding fortifications, making the bay the most heavily defended British port in the southern hemisphere. It demonstrates the evolution of coastal defence and military technology through its magazines, gun emplacements, walls, barracks, parade ground and associated structures, and is notable for rare features such as its massive landward wall, keep and large-scale unreinforced concrete works. Closely associated with defence experts Lt Col Peter Scratchley and Sir William Jervois, the Fort later became the central instructional college for army officers and remains an active defence site with strong social value for the military and the local community. Its prominent coastal setting, lighthouse and distinctive wall and keep contribute significant aesthetic and townscape values. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Characteristic Values, Aesthetic Values, Technical Achievement, Social Value, Significant People.		✓							
Fort Wallace	Fort Wallace is nationally significant as a key element of the Newcastle Fortress Area, developed to protect Newcastle Harbour and its vital industries. During World War One, Newcastle was a critical coal export hub for Australia and the Allied Nations, and in World War Two it became a major steel producer. The fort's importance increased in World War Two with the installation of 9.2-inch guns, making it the primary counter-bombardment facility for the region. Fort Wallace demonstrates three consecutive phases in coastal defence technology: the late nineteenth to early twentieth century 6-inch guns operated manually; the 9.2-inch guns supported by hydraulic and electrical power, radar, aircraft, computers, and communications systems; and post-1950s tactical air support, reflecting the shift from fixed land guns to airborne defence. It is rare in Australia for one site to contain all three phases, and uniquely, Fort Wallace was the only installation to house						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	both 6-inch and 9.2-inch guns along with associated infrastructure such as plotting rooms and observation towers. The fort also stands out as one of the few defence sites to remain active after World War Two, with the Inner Fort Precinct and Plotting Room Precinct holding particular heritage value. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Research.									
Garden Island Precinct	The Garden Island Precinct is of outstanding historical and cultural significance, being associated with the earliest days of British settlement and later developing into Australia's principal naval base. From its role as a vital source of fresh produce in 1788, the island evolved through the nineteenth century as a key Royal Navy station and, since the early twentieth century, has served as the Royal Australian Navy's main fleet base and dockyard, central to Australia's naval history and participation in global conflicts. It is rare for retaining such a unified group of fine nineteenth century naval buildings alongside unique elements including 1788 carvings, specialised machinery, and the early Oil Tank, all of which demonstrate technological and historical interest. Architecturally, the precinct showcases significant naval buildings in Victorian and Federation styles, many designed by NSW Colonial Architect James Barnet, and it remains socially significant to naval personnel and the wider Sydney community. With its distinctive blend of historic naval structures, maritime features, and industrial and landscaped areas, Garden Island is also a highly prominent and aesthetically valued landmark on Sydney Harbour. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Characteristic Values, Aesthetic Characteristics, Social Value, Significant People.						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
HMAS Cerberus Marine and Coastal Area	The Sandy Point/HMAS Cerberus area is one of the largest spit systems on the Victorian coast and one of the State's most dynamic shorelines. The area extends east from Somers on the western shore of Western Port which is a Ramsar wetland. The area contains a diverse range of marine and coastal habitats, including tidal channels, fast tidal currents, tidal mudflats, mangroves, saltmarshes and sand beaches resulting in high biodiversity of marine species including marine invertebrates and migratory and resident shorebirds. EPBC listed seabirds such as the Shy Albatross, and the Southern Giant Petrel also utilise the area. • Listed: 2004 • Class: Natural • Criterion: Processes, Rarity, Research It is possible that cultural values, both Indigenous and non-Indigenous, of national estate significance may exist in this place, however none have currently been identified within publicly available literature.		✓							
HMAS Penguin	The HMAS Penguin site comprises a series of defence-related buildings and areas and includes the waterfront areas (and jetty complex). HMAS Penguin is highly valued by the Mosman community for its symbolic, cultural and social associations. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Aesthetic characteristics, Social value.						✓			
HMS Sirius Shipwreck	The archaeological remains of HMS Sirius represent a tangible link to the most significant vessel associated with early migration of European people to Australia. HMS Sirius was guardian of the first fleet during its epic voyage to Australia between 1787 and 1788, which brought the convicts, soldiers and sailors who became Australia's first permanent European settlers.									✓

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	• Listed: 2011 • Class: Historic • Criterion: Processes, Rarity, Research, Social value, Significant people.									
Jervis Bay Territory	The Commonwealth owned Jervis Bay Territory, occurs near the southern boundary of the Hawkesbury Sandstone. Accordingly, it has a high diversity of plants and represents a northern or southern distribution limit for 33 species of plants. Dominant vegetation types include forests, woodlands, heathlands and shrublands. The place includes well preserved examples of mangrove, saltmarsh and littoral rainforest communities. The area is home to the Koori people of Wreck Bay who have always lived in, and have strong cultural ties to, the area. The place contains a large number of prehistoric Aboriginal sites. Rock shelters, stone-flaking sites and axe-sharpening grooves and shell middens demonstrate the length of Aboriginal occupation of the area. Ceremonial BUNAN or BORA grounds, used for initiation, are known only from the immediate hinterland of Wreck Bay, and nearly all known grinding groove sites are in the catchments of Mary and Summercloud Bays. These sites demonstrate past cultural practices and are important to the Wreck Bay community. • Listed: 2004 • Class: Natural • Criterion: Processes, Rarity. Research, Characteristic values, Aesthetic characteristics • Other: includes indigenous heritage areas at Crocodile Head and Currarong Rock shelters.						✓			
Kingston and Arthurs Vale Commonwealth Tenure Area	• This property is World Heritage Listed, with values described in Section 4.1									✓
Kirribilli House Garden & Grounds	The gardens and grounds of Kirribilli House, developed from the 1850s, are historically and socially significant for their association with Sydney's harbourside development, the						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	lifestyle of prominent residents, and their continuous use as the Prime Minister's Sydney residence since 1957. They have hosted visiting overseas dignitaries and are linked to early campaigns to conserve foreshore open space. The grounds reflect both Victorian landscape design and later adaptations to suit Prime Ministerial functions, including a 1956 redesign by Professor E.G. Waterhouse, a leading figure in Australian garden history. The gardens are notable for their Victorian Rustic Gothic style, mature plant specimens, and strong visual relationship with the Gothic house and Sydney Harbour. Together with neighbouring Admiralty House, they form an important harbourside garden backdrop. The site's aesthetic value is enhanced by its visibility from the harbour and its aged tree canopies. The grounds also contain one of the oldest surviving harbourside bathing pools in Sydney, though in a ruinous state. The property holds community value, being well known through its prominence on the harbour and occasional public open days. • Listed: 2004 • Class: Historic • Criterion: Processes, Aesthetic characteristics, Social Value, Significant People.									
Lady Elliot Island Lightstation	Lady Elliot Island Lightstation, built in 1873 with a timber-framed substructure and cast-iron cladding, is significant for its rare timber-framed staircase, its historical evolution reflecting changes in lighthouse technology and associated buildings, and its role in establishing navigational aids along the Queensland coast. It is also a prominent landmark marking the southern end of the Great Barrier Reef Marine Park and illustrates the development of Queensland's coastal regions after separation from New South Wales. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Characteristic Values, Aesthetic Characteristics, Technical Achievement.							✓		

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Lord Howe Island Group	This property is World Heritage Listed, with values described in Section 4.1.								✓	
Macquarie Lighthouse Group	The Macquarie Lightstation, built in 1883, is significant as the site of Australia's first lighthouse and the longest continuously operating navigational beacon in the country. It is associated with Governor Lachlan Macquarie and colonial architects Francis Greenway and James Barnet. The site has outstanding landscape value at the entrance to Sydney Harbour, with nineteenth century buildings displaying harmony in form, scale, materials, and textures. It illustrates the challenges of early colonial construction, including site isolation and on-site quarrying, and provides evidence of the changing living and working conditions of lighthouse keepers and their families, forming an early maritime community. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Aesthetic Characteristics, Technical Achievement, Significant People.						✓			
Malabar Headland	Malabar Headland contains two significant bushland remnants: representing one of the largest areas of essentially unmodified bushland in Sydney's eastern suburbs. The bushland is a significant part of one of two semi-natural corridors between Botany Bay and Port Jackson. The vegetation communities of Malabar Headland are of scientific and educational significance because they contain rare examples of coastal communities growing on Pleistocene sand deposits within the Sydney region. These communities have different species composition to those found elsewhere in the Sydney region. • Listed: 2004 • Class: Indigenous • Criterion: Processes, Rarity, Research, Social value, Indigenous tradition.						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Nepean Island Reserve	Nepean Island reserve is an important component of the Norfolk Island Group protected area system. Many of the public reserves provide an important habitat for a variety of sea and terrestrial birds and contains regenerative native vegetation. Nepean Island is the main breeding site within the Norfolk Islands for the masked booby *(Sula dactylatra).* • Listed: 2004 • Class: Natural • Criterion: Processes, rarity.									✓
Phillip Island	Phillip Island is a striking feature in the Norfolk Island seascape, with its steep terrain and exposed geology. The island supports significant seabird populations. It is the northernmost breeding site for the Australasian gannet (*Morus serrator*) and hosts one of Australia's largest breeding colonies of the red-tailed tropicbird (Phaethon rubricauda). It also lies within the restricted breeding ranges of the providence petrel (*Pterodroma solandri*), Kermadec petrel (*Pterodroma neglecta*), and white-necked petrel (*Pterodroma cervicalis*). • Listed: 2004 • Class: Natural • Criterion: Processes, Rarity, Research, Aesthetic Characteristics.									✓
Point Cook Air Base	Point Cook Air Base is historically significant as the site of the establishment of Australia's military aviation forces in 1913, including the Central Flying School and the Australian Flying Corps, and later as the focus of the newly formed RAAF under Sir Richard Williams. The base illustrates the development of Australia's air force, reflecting British-influenced planning with clear separation of functions and social hierarchy, and includes seminal buildings from 1914 to 1939 such as hangars, training facilities, officers' and airmen's quarters, the Officers Mess, headquarters, parade ground, and seaplane structures. The site played a role in pioneering flights, including the first transcontinental flight to Darwin		✓							

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	(1920), the first round-Australia flight (1924), and the first non-stop flight to Perth (1928). Architecturally, it demonstrates the Commonwealth Vernacular and Moderne styles and retains strong aesthetic, social, and symbolic value for RAAF members and the wider community, as well as an association with Sir Richard Williams and the formation of the RAAF. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Research, Characteristic Values, Social Value, Significant People.									
Point Perpendicular Lightstation	Point Perpendicular Lightstation, built in 1899, is historically significant as a relatively intact group of substantial Victorian lighthouse buildings and the first in New South Wales constructed from pre-cast concrete blocks using locally quarried stone. The Lightstation reflects the evolution of coastal navigational aids and the economic development of the surrounding region and is associated with Public Works Department designer Charles Assinder Harding, being one of three lighthouses he designed. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Research, Characteristic Values, Significant People.						✓			
Point Wilson Defence Natural Area	Point Wilson is an important part of the Western Port Phillip Bay Ramsar Area, an internationally significant wetland that provides habitat for many migratory and resident wading birds and waterfowl. It is one of the most important sites in Australia for the Double-banded Plover, regularly attracting a large population in winter. Point Wilson is also visited during winter by the endangered Orange-bellied Parrot. Other birds often recorded at the place in large numbers include Pacific Golden Plovers, Ruddy Turnstones, Curlew Sandpipers, Sharp-tailed Sandpipers and Pied Oystercatchers. The low rainfall regime of the place and the adjoining Murtcaim Wildlife Area produces dry coastal salt		✓							

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	marshes atypical of any other coastal salt marshes in Victoria. These dry salt marshes are located very close to wet salt marshes and, where these two forms coincide, they produce the most structurally and floristically diverse salt marshes in Victoria. The Point Wilson Defence Natural Area is an important cultural site for the Wathaurong people. The cultural significance of the place arises from sites and artefacts recorded there, the land on which they rest and the ecological values of the area. • Listed: 2004 • Class: Natural • Criterion: Processes, Rarity, Characteristic values, Social value.									
Royal Australian Naval College	HMAS Creswell, founded in 1911, is historically significant as the first Australian Naval College based on Royal Navy training principles and for its ongoing use in naval training, including World War Two and post-war rehabilitation activities. Architecturally, the College demonstrates early twentieth century military planning with a geometric layout, formal and informal precincts, and integration with its parkland bay-side setting in Jervis Bay. The site features high-quality Federation and Federal Capital style buildings, including the Quarterdeck, Clock Tower, Messes, residential blocks, waterfront facilities, and landscaped gardens, reflecting both British naval traditions and 'Garden City' design principles. Creswell retains strong aesthetic and cultural significance, with its picturesque bay views, preserved historic buildings, and landscaped setting, while also being associated with notable naval officers and Commonwealth architect J.S. Murdoch. The precinct is valued for its unity of design, integrity of form and materials, and its rich cultural and military heritage. • Listed: 2004 • Class: Historic • Criterion: Processes, Characteristic Values, Aesthetic Characteristics, Technical Achievement, Significant People.						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Selwyn Reserve	Selwyn Reserve, along with other public reserves, makes up an important component of the protected area system on Norfolk Island. Many of the public reserves, including Selwyn Reserve, are situated on the coast and provide important habitat for a variety of sea and land birds as well as for native vegetation. • Listed: 2004 • Class: Natural • Criterion: Processes, Aesthetic Value, Social Value.									✓
Swan Island Defence Precinct and Swan Island and Naval Waters	Swan Island is the largest emergent sand accumulation feature in Port Phillip Bay. The island, which has been built principally by wave actions rather than by aeolian forces, has played a major role in determining the pattern of sedimentation in Swan Bay and preserves geomorphological evidence of changing Quaternary sea levels. The eastern and northern shores of the eastern arm of Swan Island are of regional significance as an example of active coastal depositional and erosional processes. The patterns of erosion and accretion on these shores provide a good indicator of sand movements into Port Phillip Bay. Swan Island and Naval Waters is an integral part of Swan Bay, an internationally significant wetland which is important as wader and waterfowl habitat and provides important habitat for 46 water bird species: of which 26 species are listed under the Japan-Australia and China-Australia migratory bird agreements; and 8 species are listed under the Bonn Convention on Migratory Species. Swan Island Defence Precinct • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Research, Characteristic values, Technical Achievement, Significant People.		✓							

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Swan Island and Naval Waters • Listed: 2004 • Class: Natural • Criterion: Processes, Rarity, Research, Characteristic values. A number of historic shipwrecks are known to have occurred within the vicinity of Swan Island, 6 of which are known within the Naval Waters. The area also contains a highly significant historic cultural landscape, as the Swan Island Defence Precinct, a network of defensive fortifications, was built for Victoria's protection by the Colonial government in 1879.									
Swan Island Lighthouse	Swan Island Lighthouse, completed in 1845, is significant as the oldest lighthouse in Bass Strait and one of four pre-1850 lighthouses in Tasmania, forming part of the mid-nineteenth century Bass Strait navigation network. Built using convict labour, it reflects both the ongoing role of convicts in government projects and early intercolonial cooperation in maritime safety. The lighthouse is associated with Sir John Franklin, Lieutenant Governor of Van Diemen's Land, and demonstrates distinctive construction with a rendered rubble base and freestone capital. Intact 1930s buildings show its continued development, and the tower remains a prominent landmark with notable aesthetic and historic significance. • Listed: 2004 • Class: Historic • Criterion: Processes, Rarity, Aesthetic Characteristics, Technical Achievement, Significant People.		✓							
Tasmanian Seamounts Area	The Tasmanian pinnacle seamounts support intact benthic communities that differ markedly from the sediment dwelling faunas of the surrounding deep-sea floor. The seamounts are dominated by cold-water coral species and characterized by a relatively high species richness and endemism. They can be regarded as oases of comparative				✓	✓				

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	productivity in the open ocean, with the coral matrix which provides habitat otherwise lacking in the dark and deep abyssal waters and dense schools of seamount-associated fish. The seamounts communities are very vulnerable to disturbance being dominated by long-lived species with low growth rates. Research on the Tasmanian seamounts has already substantially contributed to the nation's knowledge of deep-sea organisms and has potential to continue to do so. They are regionally unusual ecosystems that represent the principal characteristics of seamounts as species-rich, deep-sea communities. • Listed: 2006 • Class: Natural • Criterion: Processes, Rarity, Research, Characteristic values.									
Wide Bay Military Reserve	The Wide Bay Military Reserve contains a diverse range of plant communities, including estuarine areas, coastal marshes, patches of rainforest, wetlands, heath, shrublands, woodlands, and open forests. It features a representative example of the coastal lowland complex known as 'Wallum' (Coaldrake, 1961) and includes valuable remnants of coastal rainforest. The reserve lies at the northern and southern range limits for several flora and fauna species and serves as a key refuge for palaearctic migratory birds, including species listed under the Japan-Australia Migratory Bird Agreement. Its intertidal zones form part of the Great Sandy Strait, one of Queensland's most important habitats for waders. Over 250 bird species have been recorded, a high number by Australian standards. Wide Bay also provides critical habitat for the endangered Ground Parrot (Pezoporus wallicus) in Queensland. The area forms a continuous natural corridor with Fraser Island and Cooloola National Park. • Listed: 2008 • Class: Natural • Criterion: Processes, rarity, characteristic values.							✓		

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
National Heritage Places										
Bondi Beach	Bondi Beach is an urban beach cultural landscape of waters and sands, where the natural features have been altered by development associated with beach use and consisting of promenades, parks, sea baths, the surf pavilion and pedestrian bridges. The predominant feature of the beach is the vastness of the open space within an urban setting. Bondi Beach is significant in the course of Australia's cultural history as the site of the foundation of Australia's first recognised surf lifesaving club in 1907. Bondi Beach is one of the world's most famous beaches and is of important social value to both the Australian community and to visitors. • Listed: 2008 • Class: Historic • Criterion: Events, Processes, Social value • Other: includes the Bondi Beach Surf Pavilion.						✓			
Coal Mines Historic Site	The Coal Mines Historic Site (1833–1848) is a penal colliery and probation station on the Tasman Peninsula, reflecting British convict transportation and the exploitation of natural resources in an isolated setting. At its peak, it housed up to 500 convicts and over 100 guards and family members. The site demonstrates the harsh realities of convict life, with ruins of barracks, solitary cells, a chapel, semaphore structures, and guard houses, alongside industrial features such as coal seams, adits, pit machinery, inclined planes, wharves, and jetties. It illustrates the hierarchy of officers' and prisoners' accommodation, support industries, and coal transport, and provides rare evidence of the severe punishment and moral concerns of the probation system. The intact landscape, including dormitories, solitary cells, and convict apartments, offers high archaeological potential to reveal convict working conditions, technical skills, penal					✓				

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	administration, and mining technologies, highlighting the convicts' contribution to the colony's economic development. • Listed: 2007 • Class: Historic • Criterion: Events, Processes, Rarity, Research.									
Darlington Probation Station	The Darlington Precinct is the most intact convict probation station in Australia and holds significant cultural and historical value. Operating from 1842 to 1850, it exemplifies the uniquely Australian probation system developed under Lieutenant Governor Sir John Franklin, which aimed to provide both punishment and opportunities for reform, in contrast to the earlier assignment system criticized in Britain. The site includes thirteen buildings and structures associated with the station's operation, such as convict barracks, separate apartments, a chapel, bakehouse, cookhouse, officers' quarters, oast/hop kilns, and mill foundations. Set within a largely natural environment, the precinct provides a vivid sense of life during the convict era. • Listed: 2007 • Class: Historic • Criterion: Events, Processes, Significant People.					✓				
Governors' Domain and Civic Precinct	The Governors' Domain and Civic Precinct in Sydney is of outstanding national heritage value for its direct connections to early Australian history, including interactions between Indigenous people and British colonisers, and the development of civic institutions and democratic processes. Its ensemble of buildings, parks, and gardens illustrates key events such as the establishment of Parliament, the Supreme Court, and early suffrage, while rare archaeological material provides exceptional research potential on colonisation and Indigenous contact. The precinct demonstrates the transformation of an early penal settlement into a permanent town under the influence of figures like Governors Macquarie, Phillip, and Bligh, Elizabeth Macquarie, Bennelong, and architect Francis						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Greenway, reflecting improvements in civic amenity, public institutions, and the shaping of Sydney's physical and civic character. • Listed: 2021 • Class: Historic • Criterion: Events, Processes, Rarity, Research, Creative or Technical Achievement, Significant People.									
Great Barrier Reef	This property is World Heritage Listed, with values described in Section 4.1.							✓		
Great Ocean Road and Scenic Environs	The geomorphological features of the Port Campbell Limestone Coast are rare in their diversity, and it is the definitive place in Australia to observe limestone geomorphology and coastal erosion processes on rocky coasts. The Cretaceous coast of the Otway's displays geomorphological processes that are contributing to research into the origins of significant shore platforms that illustrate the environment prior to the breakup of Gondwana. Recreational tourism was among the purposes for the road's construction, and the cultural and natural tourism experiences it offers, including the iconic Twelve Apostles and the treacherous Shipwreck Coast, are greatly valued by the Australian community. The iconic Bells Beach is valued by Australia's surfing community for its place in Australian surfing. It was the world's first Surfing Recreation Reserve and remains the location of the world's longest running international surfing carnival and home to one the most prestigious trophies in surfing. • Listed: 2011 • Class: Historic • Criterion: Events, Processes, Rarity, Research, Principal characteristics of a class of places, Aesthetic characteristics, Social value, Significant people.	✓	✓							

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
HMVS Cerberus	The HMVS Cerberus is important as evidence of the development of Australia as a nation and as part of the British Empire. The British Parliament passed the Colonial Naval Defence Act 1865 giving the colonies the power to make laws to provide for their own naval defence. The construction of HMVS Cerberus (1867-1870) reflects a period in Australia's history when the colonies were thought vulnerable to coastal attack and invasion. • Listed: 2005 • Class: Historic • Criterion: Events, Processes, Rarity.		✓							
HMS Sirius Shipwreck	The archaeological remains of HMS Sirius represent a tangible link to the most significant vessel associated with early migration of European people to Australia. HMS Sirius was guardian of the first fleet during its epic voyage to Australia between 1787 and 1788, which brought the convicts, soldiers and sailors who became Australia's first permanent European settlers. • Listed: 2011 • Class: Historic • Criterion: Processes, Rarity, Research, Social value, Significant people.									✓
Kamay Botany Bay: botanical collection sites	Kamay Botany Bay holds outstanding national heritage value as the site of the Endeavour's first landing in 1770, where Sir Joseph Banks and Dr Daniel Solander collected numerous Australian plant specimens, including type-specimens of high scientific and research significance. These collections both symbolically and practically integrated Australian flora into Western science, revolutionised systematic biology internationally, shaped European perceptions of Australia, and provided a foundational benchmark for subsequent botanical studies of the continent. • Listed: 2017						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	• Class: Historic • Criterion: Events, Processes.									
Kingston and Arthurs Vale Historic Area	This property is World Heritage Listed, with values described in Section 4.1									✓
K'gari (Fraser Island)	This property is World Heritage Listed, with values described in Section 4.1							✓		
Ku-ing-gai Chase National Park, Lion, Long and Spectacle Island Nature Reserves	Ku-ring-gai Chase National Park and Long Island, Lion Island and Spectacle Island Nature Reserves contain an exceptional representation of the Sydney region biota, a region which is recognised as a nationally outstanding centre of biodiversity. The place contains a complex pattern of 24 plant communities, including heathland, woodland, open forest, swamps and warm temperate rainforest, with a high native plant species richness of over 1000 species and an outstanding diversity of bird and other animal species. This diversity includes an outstanding representation of the species that are unique to the Sydney region, particularly those restricted to the Hawkesbury Sandstone landform. • Listed: 2006 • Class: Natural • Criterion: Events, Processes.						✓			
Kurnell Peninsula Headland	Kurnell Headland (comprising Botany Bay National Park and the Sydney Water land at Potter Point), Kurnell Peninsula, is of outstanding heritage value to the nation as the site of first recorded contact between Indigenous people and Britain in eastern Australia. The Meeting Place Precinct, including Captain Cook's Landing Place, features memorials and landscape plantings celebrating the events. Attributes specifically associated with its Indigenous values include the watering point and immediate surrounds, and the physical evidence of Indigenous occupation in the area broadly encompassed by the watering place and the landing stage. The story of Cook's first landing on the east coast of						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Australia is nationally important and an integral part of Australian recorded history and folklore. • Listed: 2004 • Class: Historic • Criterion: Events, Processes, Rarity, Social value, Significant people.									
Lord Howe Island Group	• This property is World Heritage Listed, with values described in Section 4.1.						✓		✓	
North Head (Sydney)	North Head is important as the northern expression of the seaward entrance to Sydney Harbour (Port Jackson) and played a major role in the cultural and military life of the colony of New South Wales, following the arrival of the First Fleet in 1788. The 'Heads', have signified arrival and departure at Port Jackson since 1788 and are recognised as important, iconic, national landmarks. • Listed: 2006 • Class: Historic • Criterion: Events, Processes, Rarity, Research, Principal characteristics of a class of places, Aesthetic characteristics.						✓			
Point Cook Air Base	RAAF Base Point Cook, established in 1913 as Australia's first military flying school, is the birthplace of the RAAF in 1921 and played a central role in training Australia's first military airmen. It is the only remaining World War One military airfield in Australia, containing the oldest and most extensive collection of military aviation buildings, including rare seaplane facilities and hangars. The 1917 master plan established the functional layout, social hierarchy, and organisation of the RAAF, influencing later Australian air bases. The base has strong associations with notable RAAF figures, including Richard Williams, regarded as the father of the RAAF, and Thomas Walter White. Continuously operational until 1992, Point Cook also hosts an aviation museum,		✓							

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	supporting research, restoration, and commemorative activities, and holds enduring cultural and historical significance for RAAF veterans and Australian military aviation. • Listed: 2007 • Class: Historic • Criterion: Events, Processes, Rarity, Research, Principal Characteristics of a Class Of Places, Significant people									
Point Nepean Defence Sites and Quarantine Station Area	Point Nepean is the site of the oldest, surviving, purpose-built, barracks-style, quarantine accommodation buildings in Australia, as well as fortifications demonstrating the primary importance of coastal defence to the Australian colonies. Point Nepean is an historic landscape, which features a range of values relating to both Victorian and national quarantine processes from the 1850s and to the history of coastal defence from the 1870s. • Listed: 2006 • Class: Historic • Criterion: Events, Processes, Rarity, Research, Principal characteristics of a class of places, Significant people.		✓							
Port Arthur Historic Site	Port Arthur Historic Site is a nationally significant and highly intact convict site demonstrating Britain's transportation system to Australia, particularly the secondary punishment system, and the evolution of penal management from 1830–1877. It illustrates the Probation System unique to Tasmania, including solitary punishment at the Separate Prison and rehabilitation at Point Puer for boys. After transportation ceased, the site transitioned to social welfare uses, exemplified by the rare Port Arthur Asylum (1868). The site is a rich cultural landscape combining convict-era structures, town and park developments, and natural beauty, with formal layouts, ruins, and English plantings creating a picturesque setting that contrasts with its history of confinement and punishment. The 1996 mass shooting adds a modern layer of tragic significance.					✓				

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Port Arthur demonstrates key characteristics of Australian convict sites, including classification and segregation, authority and religion, accommodation for convicts and officials, governance, punishment, and industrial and agricultural activities. Its integrity, documentary records, structures, and archaeological potential make it invaluable for research into convict life and penal administration. The site is associated with significant figures in penal philosophy, administration, and reform, including Governors Arthur, Sir John and Lady Franklin, Commandants Booth and Champ, the Royal Engineers, and reformers like Jeremy Bentham, Joshua Jebb, and notable prisoners such as William Smith O'Brien and John Frost. • Listed: 2005 • Class: Historic • Criterion: Events, Processes, Rarity, Research, Principal Characteristics of a Class Of Places, Aesthetic Characteristics, Social Value, Significant People.									
Recherche Bay (North East Peninsula) Area	The north-east peninsula of Recherche Bay has an important association with the French scientific and exploratory expedition of Rear Admiral Bruni D'Entrecasteaux. It stopped at Recherche Bay in 1792 and in 1793 for about seven weeks in total. The relatively extensive, well-documented encounters on the coast of the north-east peninsula of Recherche Bay, compared to those in other places and involving other expeditions, between the expedition members and the Tasmanian Aborigines, provided a very early opportunity for meetings and mutual observation. The recordings, from the French perspective, of these encounters, are important observations of the lives of the Tasmanian Aboriginal people. • Listed: 2005 • Class: Historic • Criterion: Events, Processes, Research, Creative or technical achievement, Social value, Significant people.				✓					

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Royal National Park and Garawarra State Conservation Area	Royal National Park (Royal NP) and Garawarra State Conservation Area (Garawarra SCA) are nationally significant for their exceptional biodiversity, hosting over 1,000 temperate plant species and a rich variety of birds, reptiles, and butterflies, exemplifying the Hawkesbury Sandstone environment. Royal NP, established in 1879 as the second national park in the world and the first in Australia, marks the start of Australia's National Park system and the conservation movement. Its creation as a recreational area reflects growing public appreciation for the natural environment and helped foster broader environmental awareness and protection in Australia. • Listed: 2006 • Class: Natural • Criterion: Events, Processes.						✓			
Sydney Harbour Bridge	The Sydney Harbour Bridge is nationally significant as a major historical, economic, and engineering achievement, symbolising Australia's progress, optimism, and collective pride during the Great Depression. Opened in 1932, it transformed Sydney's development, contributed to the nation's transport infrastructure, and remains an iconic aesthetic landmark inspiring countless artistic works. Technically, it is one of the world's greatest arch bridges, notable for its size, load capacity, and innovative construction using the natural advantages of Sydney's sandstone. The bridge is also closely associated with John Job Crew Bradfield, one of Australia's most renowned engineers. • Listed: 2007 • Class: Historic • Criterion: Events, Processes, Aesthetic Characteristics, Creative or Technical Achievement, Social Value, Significant People.						✓			
Sydney Opera House	This property is World Heritage Listed, with values described in Section 4.1.						✓			

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Tasmanian Wilderness	This property is World Heritage Listed, with values described in Section 4.1.				✓					
The Battle of the Coral Sea Site	The Battle of the Coral Sea Site was listed for its outstanding value for its connection with the strategically important battle that took place in the Coral Sea during World War II and the subsequent strengthening of Australia's security relationship with the United States. It was significant as the four-day battle was the first naval engagement fought using aircraft carriers without opposing ships making contact, marking the beginning of the Allied victory in the Pacific, which was a turning point in World War II. The Battle of the Coral Sea Site includes the location of known shipwrecks within Australia's Exclusive Economic Zone (EEZ), the *USS Lexington, USS Neosho* and *USS Sims*. These locations are representative of a much larger area where the battle was fought that extends outside of Australia's EEZ, and is located between Australia, Papua New Guinea, and the Solomon Islands. Within this larger area, there are other shipwrecks associated with the battle including the Japanese light carrier *Shoho*, and other underwater cultural heritage including numerous (> 160) aircraft lost by both sides, many of which remain undiscovered. • Listed: 2025 • Class: Indigenous • Criterion: Events, Processes, Research.							✓		
Western Tasmania Aboriginal Cultural Landscape	The Western Tasmania Aboriginal Cultural Landscape represents the best evidence of an Aboriginal economic adaptation which included the development of a semi-sedentary way of life with people moving seasonally up and down the north-west coast of Tasmania. This way of life began approximately 1 900 years ago and lasted until the 1830s. Dotted along the wind-swept coastline of the Western Tasmania Cultural Landscape are the remains of numerous hut depressions found in Aboriginal shell middens. These huts and middens are the remnants of an unusual, specialised and more				✓					

Name	Description	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	sedentary Aboriginal way of life which was based on the hunting of seals and land mammals, and the gathering of shellfish. • Listed: 2013 • Class: Indigenous • Criterion: Events, Processes.									

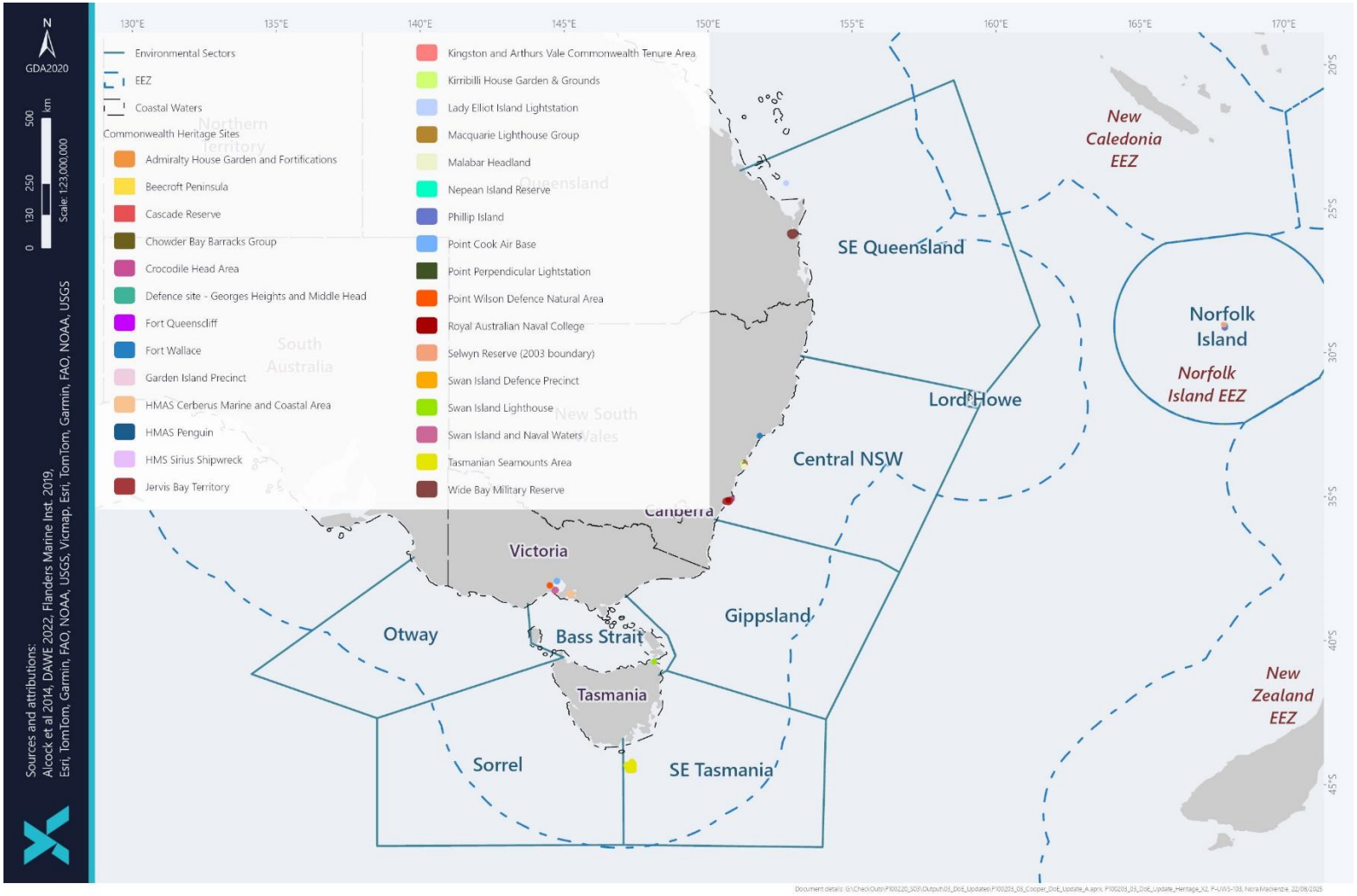


Figure 5-53: Commonwealth Heritage Areas within the Environmental Sectors

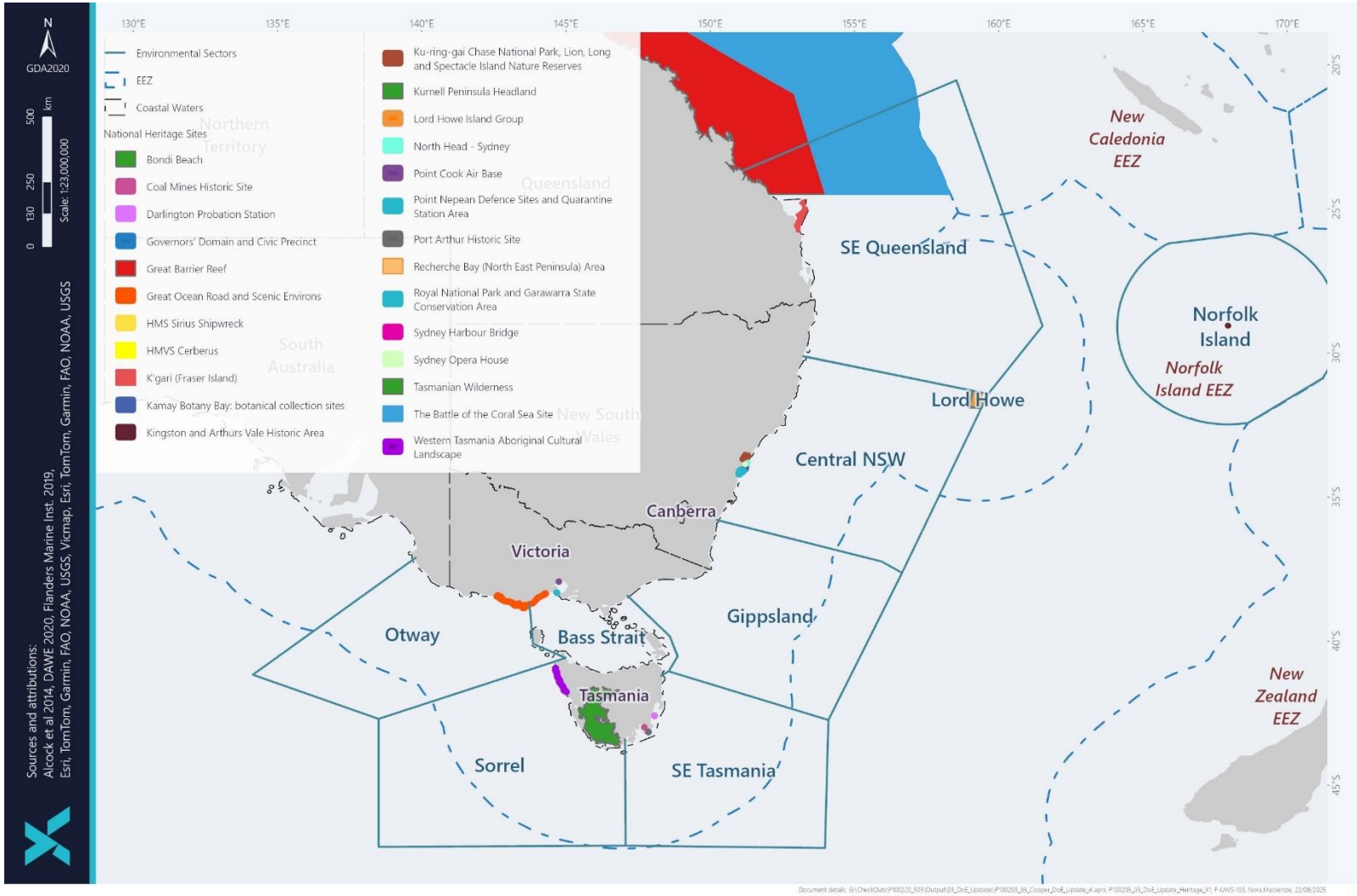


Figure 5-54: National Heritage Places within the Environmental Sectors

6.0 Summary

The following tables show the presence of ecological (Table 6-1) and social (Table 6-2) receptors that may occur within each of the Environmental Sectors (*Figure 1-1*).

Examples of values and sensitivities associated with each of the ecological or social receptors have been included in the tables. These values and sensitivities have been identified based on:

- presence of listed threatened or migratory species, or threatened ecological communities
- presence of BIAs
- presence of important behaviours (e.g. foraging, roosting or breeding) by fauna, including those identified in the EPBC Protected Matter searches
- provides an important link to other receptors (e.g. nursery habitat, food source, commercial species), or
- provides an important human benefit (e.g. community engagement, economic benefit).

For a summary of the receptors present within Amplitude activities operational areas and EMBAs, refer to the relevant Environment Plans.

Table 6-1: Presence of Ecological Receptors within the Environmental Sectors

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Habitat	Shoreline	Cliff	Foraging habitat (e.g. birds) Nesting or Breeding habitat (e.g. birds)		✓		✓	✓	✓	✓	✓	✓
		Rocky	Foraging habitat (e.g. birds) Nesting or Breeding habitat (e.g. birds, pinnipeds) Haul-out sites (e.g. pinnipeds)	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Gravel/Cobble	Foraging habitat (e.g. birds) Nesting or Breeding habitat (e.g. birds, pinnipeds) Haul-out sites (e.g. pinnipeds)	✓	✓		✓	✓	✓	✓		
		Sandy	Foraging habitat (e.g. birds) Nesting or Breeding habitat (e.g. birds, pinnipeds, turtles) Haul-out sites (e.g. pinnipeds)	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Muddy	Foraging habitat (e.g. birds)		✓		✓	✓				
		Tidal Flat	Foraging habitat (e.g. birds)		✓	✓	✓	✓	✓	✓	✓	✓
		Artificial structure	Community engagement Economic benefit	✓	✓	✓	✓	✓	✓	✓	✓	
	Mangroves	Mangrove strands	Nursery habitat (e.g. crustaceans, fish)		✓			✓	✓	✓	✓	

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Saltmarshes	Saltmarsh Ecosystems	Nursery habitat (e.g. crustaceans, fish)	✓	✓	✓	✓	✓	✓	✓	✓	
			Threatened Ecological Community	✓	✓	✓	✓	✓	✓	✓		
	Coastal Vine Thicket	Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Threatened Ecological Community			✓			✓	✓		
	Soft Sediment	Unvegetated soft sediment substrates	Key habitat (e.g. benthic invertebrates)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Seagrass	Seagrass meadows	Nursery habitat (e.g. crustaceans, fish) Food source (e.g. dugong, turtles)	✓	✓	✓	✓	✓	✓	✓	✓	
			Threated Ecological Community						✓			
	Algae	Benthic Microalgae	Food source (e.g. gastropods)	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Macroalgae beds	Nursery habitat (e.g. crustaceans, fish) Food source (e.g. birds, fish)	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Threated Ecological Community		✓			✓				
	Coral	Hard and soft coral communities	Nursery habitat (e.g. crustaceans, fish) Breeding habitat (e.g. fish)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine Fauna	Plankton	Phytoplankton and zooplankton assemblages	Food Source (e.g. whales, turtles)	✓	✓	✓	✓	✓	✓	✓	✓	✓

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Seabirds and Shorebirds	Seabirds and Shorebirds	Listed Marine Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Threatened Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Migratory Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			BIA – Aggregation	✓	✓		✓	✓				
			BIA – Breeding	✓	✓	✓	✓	✓	✓	✓	✓	✓
			BIA – Foraging	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Behaviour - Breeding	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Behaviour - Foraging	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Behaviour - Roosting	✓	✓	✓	✓	✓	✓	✓		✓
	Marine Invertebrates	Benthic and pelagic invertebrate communities	Food Source (e.g. whales, turtles) Commercial Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Threatened Species				✓	✓				
	Fish	Fish	Threatened Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Commercial Species	✓	✓	✓	✓	✓	✓	✓	✓	✓

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
		Sharks and Rays	Threatened Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Migratory Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			BIA – Aggregation						✓	✓		
			BIA – Breeding		✓	✓			✓	✓		
			BIA – Distribution	✓	✓	✓	✓	✓	✓	✓		
			Behaviour - Breeding		✓	✓			✓			
			Behaviour – Congregation/Aggregation							✓		
			Behaviour - Foraging	✓			✓	✓				
		Syngnathids	Listed Marine Species	✓	✓	✓	✓	✓	✓	✓	✓	
	Marine Reptiles	Turtles	Listed Marine Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Threatened Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Migratory Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			BIA – Foraging							✓		

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
			BIA – Internesting							✓		
			BIA – Nesting							✓		
			Behaviour - Breeding	✓		✓	✓	✓	✓	✓		
			Behaviour – Foraging	✓	✓	✓			✓	✓		
		Sea snakes	Listed Marine Species						✓	✓		
		Crocodiles	Listed Marine Species							✓		
			Migratory Species							✓		
	Marine Mammals	Pinnipeds	Listed Marine Species	✓	✓	✓	✓	✓	✓	✓		
			Threatened Species	✓			✓					
			BIA – Foraging	✓								
			Behaviour - Breeding	✓	✓	✓	✓					
			Behaviour - Foraging	✓	✓	✓	✓	✓				
		Sirenians	Listed Marine Species					✓	✓			

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
			Migratory Species					✓	✓			
		Whales	Listed Marine Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Threatened Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Migratory Species	✓	✓	✓	✓	✓	✓	✓	✓	✓
			BIA – Aggregation	✓								
			BIA – Breeding					✓		✓		
			BIA – Connecting Habitat		✓		✓	✓				
			BIA - Distribution									
			BIA – Foraging	✓	✓	✓	✓	✓				
			BIA – Migration	✓	✓	✓			✓	✓		
			Behaviour - Breeding	✓						✓		
			Behaviour - Foraging	✓	✓	✓	✓	✓	✓	✓		
		Dolphins	Listed Marine Species	✓	✓	✓	✓	✓	✓	✓	✓	✓

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
			Migratory Species	✓	✓	✓	✓	✓	✓	✓		
			BIA – Breeding							✓		
			BIA – Calving							✓		
			BIA – Foraging							✓		
			Behaviour - Breeding							✓		
		Porpoise	Listed Marine Species					✓	✓			
			Migratory Species					✓	✓			

Table 6-2: Presence of Social Receptors within the Environmental Sectors

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
	Commonwealth Parks	Key Ecological Features	Various; e.g. high productivity, aggregations of marine life	✓	✓	✓	✓	✓	✓	✓	✓	

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Natural System			Refer to Section 4.6for specific values and sensitivities associated with each KEF									
		Australian Marine Park	Various; e.g. migration route, foraging areas, heritage sites Refer to Section 4.3 for values and sensitivities associated with each AMP	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Commonwealth National Park	Various; e.g. breeding areas, cultural sites Refer to Section 4.3.2 for values and sensitivities associated with National Park						✓			
	State Parks and Reserves	Marine Protected Areas	Various; e.g. foraging or breeding areas	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Terrestrial Protected Areas	Various; e.g. shorelines	✓	✓	✓	✓	✓	✓	✓		
	Wetlands	International (Ramsar) Importance	Various; e.g. high biodiversity, habitat for threatened species Refer to Section 4.4.1for values and sensitivities associated with each wetland	✓	✓	✓		✓	✓	✓		
		National Importance	Various; e.g. high biodiversity, habitat for threatened species Refer to Section 4.4.2for values and sensitivities associated with each wetland	✓	✓	✓	✓	✓	✓	✓		

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
Human System	Commercial Fisheries	Commonwealth-managed	Economic benefit	✓	✓	✓	✓	✓	✓	✓		✓
		State-managed	Economic benefit	✓	✓	✓	✓	✓	✓	✓		
	Recreational Fisheries		Community engagement	✓	✓	✓	✓	✓	✓	✓		
	Coastal Settlements		Community engagement Economic benefit	✓	✓	✓	✓	✓	✓	✓		✓
	Recreation and Tourism		Community engagement Economic benefit	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Industry	Shipping	Community engagement Economic benefit	✓	✓	✓	✓	✓	✓	✓	✓	
		Oil and Gas Exploration and/or Operation	Economic benefit	✓	✓	✓	✓	✓	✓			
		Submarine Cables and Pipelines	Economic benefit		✓				✓			
		Military	Protection and surveillance		✓				✓			
	Heritage	Maritime	Shipwrecks	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Cultural	Commonwealth Heritage Places World Heritage Properties National Heritage Places	✓	✓	✓	✓	✓	✓	✓		✓
		Indigenous	Indigenous use or connection Native Title	✓	✓	✓	✓	✓	✓	✓	✓	

Receptor Group	Receptor Type	Receptor Description	Values and Sensitivities	Otway	Bass Strait	Gippsland	Sorell	SE Tasmania	Central NSW	SE Queensland	Lord Howe	Norfolk Island
			Indigenous Land Use Agreements									

7.0 References

7.1 Amplitude Energy Documents

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Appendix 1 - Marine/Coastal Wetlands of International importance

The classification of a 'marine/coastal wetland' is extensive and includes those wetlands that while predominantly based inland have some form of connection with the coast and/or marine waters. The Ramsar classification for 'marine/coastal wetlands' includes:

- A — Permanent shallow marine waters in most cases less than six metres deep at low tide; includes sea bays and straits.
- B — Marine subtidal aquatic beds; includes kelp beds, sea-grass beds, tropical marine meadows.
- C — Coral reefs.
- D — Rocky marine shores; includes rocky offshore islands, sea cliffs.
- E — Sand, shingle or pebble shores; includes sand bars, spits and sandy islets; includes dune systems and humid dune slacks.
- F — Estuarine waters; permanent water of estuaries and estuarine systems of deltas.
- G — Intertidal mud, sand or salt flats.
- H — Intertidal marshes; includes salt marshes, salt meadows, saltings, raised salt marshes; includes tidal brackish and freshwater marshes.
- I — Intertidal forested wetlands; includes mangrove swamps, nipah swamps and tidal freshwater swamp forests.
- J — Coastal brackish/saline lagoons; brackish to saline lagoons with at least one relatively narrow connection to the sea.
- K — Coastal freshwater lagoons; includes freshwater delta lagoons.
- Zk(a) —Karst and other subterranean hydrological systems, marine/coastal.

The key features of the wetland sites, as described within the Australian Wetland Database, are provided in Table 7-1.

Table 7-1: Key Features of Internationally Important Wetlands

Wetland	Key Features
South Australia	
Piccaninnie Ponds Karst Wetlands	The Piccaninnie Ponds Karst Wetlands Ramsar Site is located in south-east South Australia, near Mount Gambier. The Piccaninnie Ponds Karst Wetlands are an example of karst spring wetlands, with the largest and deepest of the springs reaching a depth of more than 110 m. The majority of the water comes from an unconfined regional aquifer and is consistently 14-15°C. The karst springs support unique macrophyte and algal associations, with macrophyte growth extending to 15 m below the surface as a result of exceptional water clarity. A number of different wetland types exist on the site, including a large area of peat fens. There are four distinct areas of the Ramsar site. Piccaninnie Ponds (also known as Main Ponds) consists of three interconnected bodies of water - First Pond, The Chasm and Turtle Pond - rounded by an area of shrub dominated swamp. Western Wetland consists of dense closed tea-tree and paperbark shrubland over shallow dark clay on limestone soils. Eastern Wetland includes the spring-fed Hammerhead Pond. Pick Swamp, on the extreme west of the site, includes areas of fen, marshes and sedgelands as well as the spring-fed Crescent Pond on peat soils. The system is an important remnant of an extensive system of wetlands that once occupied much of the south-east of South Australia. The major groundwater discharge points are Main

Wetland	Key Features
	Ponds, Hammerhead Pond and Crescent Pond. Water principally leaves the site via Outlet Creek and the Pick Swamp drain outlet, which connect the site to the sea. There are a number of fresh groundwater beach springs located on the site. The geomorphic and hydrological features of the site produce a complex and biologically diverse ecosystem which supports considerable biodiversity, including a significant number of species of national and/or international conservation value. These include the Orange-bellied Parrot, Australasian Bittern and Yarra Pygmy Perch. The site attracts 20,000 visitors annually for cave diving, snorkelling, bushwalking, educational activities and birdwatching. The site also has spiritual and cultural value. The Traditional Owners of the land, the Bunganditj (Boandik) and local Indigenous people have a strong connection with the site. Traditionally the site provided a good source of food and fresh water, and evidence of previous occupation still exists. Reference Department of Agriculture, Water and the Environment. Piccaninnie Ponds Karst Wetlands, in Australian Wetlands Database. Department of Agriculture, Water and the Environment. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=66**. Accessed July 2025.
Victoria	
Corner Inlet	The Corner Inlet Ramsar (marine embayment and tidal mudflat system) site is located on the southeast coast of Victoria. It is bound to the west and north by the South Gippsland coastline, in the southeast by a series of barrier islands and sandy spits lying end to end and separated by narrow entrances, and to the south by the hills of Wilsons Promontory. Corner Inlet includes the chain of barrier islands, multiple beach ridges, lagoons and swamps, tidal creeks, tidal deltas, and tidal washovers. The mainland coast and several sandy islands are covered with mangroves, saltmarshes, sandy beaches and very extensive intertidal mudflats. The area contains the only extensive bed of the Broad-leafed Seagrass in Victoria. The islands of Corner Inlet, although not rich in plant diversity, are of high biogeographical significance as a result of their geological history and connectivity to the mainland during ice

Wetland	Key Features
	ages. The islands also contain significant areas of saltmarsh and mangroves, both of which are communities of very limited distribution. Corner Inlet supports more than 390 species of marine invertebrates and 390 species of native flora. The Ramsar site also has a high diversity of bird species with thirty-two wader species recorded. Corner Inlet provides extensive tidal flats that are exposed at low tide, which are important feeding areas for waders. It is estimated that nearly 50 per cent of the overwintering migratory waders in Victoria occur in Corner Inlet. The nationally threatened species utilising the Ramsar site include the Orange-bellied Parrot, Growling Grass Frog, Australian Grayling and Swift Parrot. Corner Inlet was used traditionally by Indigenous people, and many archaeological sites including scarred trees, burial sites, artefact scatters, shell middens and camps have been found. Currently, the Ramsar site is used for biological conservation, ports with servicing facilities for offshore oil and natural gas exploration, commercial fishing, recreational fishing, and other recreational activities. Diving is popular around the numerous shipwreck sites in Corner Inlet and around the barrier islands. Reference Department of the Environment and Energy. 2017. Corner Inlet, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=13**. Accessed July 2025.
Gippsland Lakes	The Gippsland Lakes Ramsar site is located approximately 300 km east of Melbourne on the low-lying South East Coastal Plain bioregion. Covering a vast area, the lakes are a series of large, shallow, coastal lagoons approximately 70 km in length and 10 km wide, separated from the sea by sand dunes. The surface area of the lakes is approximately 364 km^2 and the three main water bodies are Lakes Wellington, Victoria, and King. The Gippsland Lakes together form the largest navigable inland waterway in Australia and create a distinctive regional landscape of wetlands and flat coastal plains of considerable environmental significance.

Wetland	Key Features
	The Mitchell Delta of the Ramsar site is a classic form of digitate delta and ranks as one of the finest examples of this type of landform in the world. The silt jetties of the delta extend almost eight kilometres into the lake as low, narrow tongues of sediment that were formerly bordered by a wide zone of reedswamp. The Ramsar site contains 11 Ramsar wetland habitat types including most notably, coastal lagoons, subtidal seagrass and algal beds, and a range of saline, brackish and freshwater marsh environments. The site supports a broad range of ecosystem services including nationally and internationally threatened wetland species, waterbird breeding and fish spawning sites. Cultural and socio-economic values are equally diverse, noting the particular importance of the site in a regional context in terms of recreational activities such as boating, recreational fishing and holiday tourism. The Gippsland Lakes support three nationally vulnerable and endangered wetland-associated flora species (Dwarf Kerrawang, Swamp Everlasting and Metallic Sun-orchid), and the nationally threatened Growling Grass Frog and Green and Golden Bell Frog. The bird diversity of the Ramsar wetland is high with 86 species of waterbirds being recorded including large numbers of the Red-necked Stint, Black Swan, Sharp-tailed Sandpiper, Chestnut Teal, Musk Duck, Fairy Tern and Little Tern. Currently, parts of the Lakes system are heavily used for commercial and recreational fisheries and boating activities, while the immediate hinterland has been developed for agricultural use and limited residential and tourism purposes. Reference Department of the Environment and Energy. 2017. Gippsland Lakes, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=21**. Accessed July 2025.
Glenelg Estuary and Discovery Bay Wetlands	The Glenelg Estuary and Discovery Bay Ramsar Site is situated in western Victoria. It covers approximately 22,289 hectares and comprises portions of the Lower Glenelg National Park, the Discovery Bay Coastal Park and the Nelson Streamside Reserve. The Glenelg River estuary is the longest in the bioregion, extending 75 kilometres. The Ramsar site comprises three broad systems that support different wetland types: freshwater wetlands, the Glenelg Estuary and the beach and dune system. The site contains several regionally (and internationally) rare wetland types: intact fen peatlands and a humid dune slack system. The site: • supports the nationally vulnerable coastal saltmarsh ecological community and eight nationally / internationally listed threatened flora and fauna species. • provides habitat for 95 waterbird species including 24 species listed under international agreements: CAMBA (24), JAMBA (24), ROKAMBA (21), BONN (21). Beach nesting birds such as hooded plover (*Thinornis rubricollis*) and red-capped plover (*Charadrius ruficapillus*) are regularly recorded nesting on the dunes of the Discovery Bay Coastal Park. • supports 14 species of native fish which are diadromous, migrating between habitats for part of their lifecycle by providing food, spawning grounds and nurseries. It also acts as a migration path on which diadromous fishes of the region depend. • provides habitat for obligate aquatic species in the permanent wetlands of the Long Swamp complex and Bridgewater Lakes when the surrounding landscape is dry and during drought conditions. • supports > 1% of the population of the wetland dependent invertebrate species the Ancient greenling (*Hemiphlebia mirabilis*) in the Baumea sedgelands.

Wetland	Key Features
	 The area is popular for recreational and tourism activities, including sightseeing, walking, camping, and recreational fishing. Importantly, the Gunditjmara Indigenous people have a living association with the Ramsar site, which has great cultural significance for them, as it is part of their Koonang (sea) and Bocara Woorrowarook (river forest) country. The ecological character of the site is defined by 10 critical components, processes and services: • Components: – Hydrology – Vegetation type and extent – Fish diversity and abundance – Waterbird diversity and abundance • Process: – Stratification • Services: – Special features (dune slacks) – Supports a diversity of wetland types – Supports threatened species – Provides physical habitat for waterbirds – Ecological connectivity. <u>Reference</u> Department of Agriculture, Water and the Environment. 2021. Glenelg Estuary and Discovery Bay Wetlands in Australian Wetlands Database. Department of Agriculture, Water and the Environment, Canberra. Available from: **https://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=67** Accessed July 2025.
Port Philip Bay (Western Shoreline) and Bellarine Peninsula	The Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site is located in the western portion of Port Phillip Bay, near the city of Geelong in Victoria. The site comprises six distinct areas that include Point Cook/Cheetham, Werribee/Avalon, Point Wilson/Limeburners Bay, Swan Bay, Mud Islands, and the Lake Connewarre Complex.

Wetland	Key Features
	The Ramsar site is a low-lying area and a natural discharge point for the rivers draining southern central Victoria. The tidal amplitude within the bay is reduced compared with Bass Strait due to the narrow opening of the Bay (Port Phillip Heads). Port Phillip Bay (Western Shoreline) and Bellarine Peninsula support a variety of wetland types ranging from shallow marine waters to seasonal freshwater swamps and extensive sewage ponds. Wetland areas include freshwater lakes, estuaries, some with White Mangrove, saltmarshes, intertidal mudflats and seagrass beds. The Ramsar site supports some plants species threatened in Victoria, such as Small Scurf-pea and Rare Bitter-bush. This Ramsar site is the sixth most important area in Australia for migratory waders and the most important in Victoria. Large numbers of bird species including Pied Oystercatchers, Banded Stilts, Red-necked Stint, Sharp-tailed Sandpiper, Fairy Tern, Australasian Shoveler, Red-necked Avocets, Blue-billed Duck, and Freckled Duck, have been recorded at the site. Furthermore, the Melbourne Water Corporation Sewage Farm and Western Treatment Plant at Werribee support many waterbirds on its retention ponds. Port Phillip Bay (Western Shoreline) and Bellarine Peninsula provide important habitat for threatened species such as the Little Tern and Striped Legless Lizard. In particular, large numbers of the nationally threatened Orange-bellied Parrot utilise Port Phillip Bay during the winter after their summer migration to Tasmania to breed. Swan Bay and Limeburners Lagoon are also valuable fish breeding grounds for many of the commercial species caught in Port Phillip Bay. There are a number of important indigenous sites within the wetlands, including burial sites, middens and artefacts, with the oldest midden in the area being at least 5,000 years old. Currently over three million people live around Port Phillip Bay, which is used intensively for recreation, nature conservation, sewage treatment, aquaculture, fishing, and salt production. Reference Department of the Environment and Energy. 2017. Port Phillip Bay (Western Shoreline) and Bellarine Peninsula, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=18** . Accessed July 2025.
Western Port	Western Port is a large bay in southern Victoria incorporating around 260 km of coastline, connected to Bass Strait by a wide channel between Flinders and Phillip Island, and a narrow channel between San Remo and Phillip Island. Six rivers from the north and east of the catchment flow into the northern and eastern shores of Western Port and several minor rivers and creeks on the eastern slopes of the Mornington Peninsula drain into the western shores.

Wetland	Key Features
	 The Ramsar site has a wide variety of habitat types, ranging from deep channels, seagrass flats, intertidal mudflats, extensive mangrove thickets and saltmarsh vegetation. The white mangrove communities within Western Port are the most well-developed and extensive in Victoria and are the only large communities situated so far from the Equator. Threatened plant species that are found within the Ramsar site include Dense Leek-orchid, Creeping Rush, and Tiny Arrow Grass. Western Port is one of the three most important areas for waders in Victoria, and the site supports numerous migratory species listed under international migratory bird conservation agreements. High numbers of Eastern Curlew, Whimbrel, Bar-tailed Godwit, Grey-tailed Tattler, Greenshank and Terek Sandpiper have been recorded at the site. Nationally threatened species that utilise Western Port include the Orange-bellied Parrot, Swift Parrot, Helmeted Honeyeater, Little Tern, Southern Right Whale, and listed migratory Humpback Whale. The site supports the globally threatened Fairy Tern which is listed as vulnerable on the IUCN Red List of Threatened Species. A number of Indigenous cultural heritage sites on the shores of Western Port have been identified. Currently, Western Port is used for commercial fishing and recreational activities such as boating, swimming and fishing. Reference Department of the Environment and Energy. 2017. Western Port, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=18**. Accessed July 2025.
Tasmania	
East Coast Cape Barren Island Lagoons	The East Coast Cape Barren Island Lagoons Ramsar site is located on the east coast of Cape Barren Island, one of the Furneaux Group of islands which lie in Bass Strait to the north-east of Tasmania. The site extends from just north of Tar Point down to Jamieson's Bay and extends westwards from the coast for a distance varying from one to four kilometres.

Wetland	Key Features
	 It comprises a complex of freshwater, brackish, saline and sometimes hypersaline lagoons, wetlands and estuaries that owe their existence to a dune system which has been slowly developing in an easterly direction, leaving shallow sandy soils, depressions and intermittently flowing water courses. The vegetation of the site is characterised by a tussock grassland of the exotic species Marram Grass on the foredunes, with a closed-scrub of Coastal Wattle, Prickly Moses and Marram Grass stabilising the hind dunes. Coastal Wattle, Silver Banksia and Southern Grass Tree form an open scrub on the sand plains behind these dunes, with further inland areas dominated by Manna Gum, Swamp Gum and Smithton Peppermint. This extensive system of shallow coastal lagoons contains a number of species that are considered to be of special botanical interest, including the Scarce Centrolepis which is rare at both a state and national level. Pointed Centrolepis, Sharpleaf Rush, Water Milfoil, Sago Pondweed, and Round-leaf Wilsonia are also found within the site. Locally significant numbers of duck species for the Flinders bioregion utilise this area. In addition, the Ramsar site is of great importance for the Hooded Plover. This area is of cultural importance to the local Indigenous community, who manage the freehold title to part of Cape Barren Island, including the Ramsar site. Access is currently restricted, keeping the site largely undisturbed, with a single bush track for 4WD vehicles providing access for duck hunters to Flyover Lagoon. Reference Department of the Environment and Energy. 2017. East Coast Cape Barren Island Lagoons, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=8**. Accessed July 2025.
Flood Plain Lower Ringarooma River	The Flood Plain Lower Ringarooma River Ramsar site is located on the far north-east coast of Tasmania, between Cape Portland and Waterhouse Point. The site is situated on the sandy flood plain of the Lower Ringarooma River which encompasses extensive marshlands and a number of shallow lagoons: Shantys Lagoon, Blueys Lagoon and Bowlers Lagoon. The Ringarooma River drains out into Ringarooma Bay.

Wetland	Key Features
	The hydrology of this site is influenced by tidal flows, river flows and local groundwater. The bulk of the wetland area is above the tidal limit and is largely controlled by inflows from the Ringarooma River. The Ramsar site is dominated by scrub and tussock grassland vegetation and includes substantial areas of freshwater marsh habitat in the flood plain. The varieties of habitats support the following vegetation communities: Saltmarsh, Coastal grass and herbfield, Lowland Sedgy heathland, Wet heathland, Coastal heathland, Coastal scrub, *Allocasuarina verticillata* forest and Eucalyptus coastal forest. The Flood Plain Lower Ringarooma River is considered to be a good foraging area for dabbling ducks and other waterbirds due to the large area of shallow water. A number of bird species listed under international migratory conservation agreements have also been recorded at the site. These include: Cattle Egret, Great Egret, Latham's Snipe, Curlew Sandpiper, Red-necked Stint, Bar-tailed Godwit, Caspian Tern and Greenshank. Australasian Shoveler, Little Tern, Hooded Plover and Fairy Tern are also known to breed within the Ramsar site. The Ramsar site also provides habitat for threatened species, including four wetland-dependent species: • green and gold frog; • dwarf galaxias; • fairy tern; and • Australian grayling. The Flood Plain Lower Ringarooma River was traditionally used by Indigenous people. It also has a history of European occupation and mining exploitation since the early 1800s. Currently, the Ramsar site is used for duck hunting and cattle grazing. Reference Department of the Environment and Energy. 2017. Flood Plain Lower Ringarooma River, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=9** . Accessed July 2025.
Lavinia	The Lavinia Ramsar site's estuary and associated sand plains, coastal swamps, and lagoons is located on the north-east coast of King Island, Tasmania. The boundary of the site forms the Lavinia State Reserve, with major wetlands in the reserve including the Sea Elephant River estuary area, Lake Martha Lavinia, Penny's Lagoon, and the Nook Swamps. The shifting sands of the Sea Elephant River's mouth have caused a large back-up of brackish water in the site, creating the saltmarsh which extends up to five kilometres inland. The present landscape is the result of several distinct periods of dune formation.

Wetland	Key Features
	 The extensive Nook Swamps, which run roughly parallel to the coast, occupy a flat depression between the newer parallel dunes to the east of the site and the older dunes further inland. Water flows into the wetlands from the catchment through surface channels and groundwater and leaves mainly from the bar at the mouth of the Sea Elephant River and seepage through the young dune systems emerging as beach springs. The Lavinia State Reserve is one of the few largely unaltered areas of the island and contains much of the remaining native vegetation on King Island. The vegetation communities present on the site include Succulent Saline Herbland, Coastal Grass and Herbfield, Coastal Scrub and King Island Eucalyptus globulus Woodland. The freshwater areas of the Nook Swamps are dominated by swamp forest. Nook Swamps and the surrounding wetlands contain extensive peatlands. The site is an important refuge for a collection of regional and nationally threatened species, including the nationally endangered Orange-bellied Parrot. This parrot is heavily dependent upon the samphire plant, which occurs in the saltmarsh, for food during migration. They also roost at night in the trees and scrub surrounding the Sea Elephant River estuary. Several species of birds which use the reserve are rarely observed on the Tasmanian mainland, including the Dusky Moorhen, Nankeen Kestrel, Rufous Night Heron and the Golden-headed Cisticola. The site is currently used for conservation and recreation, including boating, fishing, camping and off-road driving. There are artefacts of Indigenous Australian occupation on King Island that date back to the last ice age when the island was connected to Tasmania and mainland Australia via the Bassian Plain. Reference Department of the Environment and Energy. 2017. Lavinia, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=5**. Accessed July 2025.
Logan Lagoon	The Logan Lagoon Ramsar site is enclosed within the Logan Lagoon Conservation Area and is located on the south-east corner of Flinders Island in Bass Strait, Tasmania. The site is an

Wetland	Key Features
	excellent, regionally representative example of a coastal estuarine wetland system and includes Logan, Syndicate and Wilsons Lagoons, Pot Boil Point and part of Planters Beach. The catchment of Logan Lagoon is low lying, with the water table very close to the soil surface, and water flows into the lagoons mainly from groundwater. The water level in Logan Lagoon fluctuates seasonally with rainfall, generally being high during winter and spring and low during late summer and autumn. Only one small natural watercourse, Pot Boil Creek, flows directly into Logan Lagoon. In extended dry periods the lagoon dries out and water is only contained in the southernmost section of the lagoon. The dominant vegetation communities present within the site are saline aquatic herbland, saline sedgeland and rushland, succulent saline herbland, coastal grass and herbfield and Acacia longifolia coastal scrub. When full, the lagoon provides feeding and resting habitat for a number of migratory waders including the Red-necked Stint, Common Greenshank, Eastern Curlew, Bar-tailed Godwit and Double-banded Plover. The wetland is an important part of the East Asian - Australasian Flyway, and twenty migratory bird species listed under internationally agreements use the site. The Ramsar site is used for conservation, education, research, and recreation such as walking, sightseeing, bird watching, off-road vehicle driving and beach fishing. Reference Department of the Environment and Energy. 2017. Logan Lagoon, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=4** . Accessed July 2025.
Moulting Lagoon	Moulting Lagoon is situated on the central east coast of Tasmania, between the townships of Swansea and Bicheno and approximately six kilometres north-west of the township of Coles Bay. The lagoon is a large estuary at the mouths of the Swan and Apsley Rivers. The estuary lies at the head of Great Oyster Bay where the Freycinet Peninsula extends offshore to the south. The lagoon formed with the partial closure of the mouths of the Swan and Apsley Rivers, due to the creation of a bayhead spit and associated dunefield between 10,000 and 6,000 years ago. The lagoon contains areas of both shallow and deep water and is surrounded by periodically exposed mudflats and saltmarsh. The plant communities around Moulting Lagoon reflect the

Wetland	Key Features
	wide diversity of terrain and consequent soil drainage patterns. Aquatic vegetation in the estuary is largely composed of seagrasses. Succulent saline herbland and saline sedgeland and rushland, both saltmarsh communities, surround the lagoon. Vegetation in the shallower areas, mainly Beaded Grasswort and Sea Rush, provides an important nesting, roosting and feeding habitat for the numerous resident waterfowl. The Ramsar site is an important breeding area for Black Swan and an important staging area for all the other species of waterfowl in Tasmania, with particularly large summer concentrations of Australian Shelduck and Chestnut Teal. It also supports the largest known Tasmanian flocks of Greenshank. Moulting Lagoon is part of the Moulting Lagoon Game Reserve. The area historically was used for the harvest of waterfowl and their eggs by Indigenous people who lived around the lagoon. Current use of the Ramsar site includes recreational activities such as fishing and hunting, and commercial activities such as aquaculture and tourism. Reference Department of the Environment and Energy. 2017. Moulting Lagoon, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=3**. Accessed July 2025.
Pitt Water-Orielton Lagoon	The Pitt Water-Orielton Lagoon Ramsar site is located on the south-east coast of Tasmania, approximately 20 km east of the city of Hobart, between the towns of Cambridge and Sorell. Pitt Water is a tidal salt water lagoon, dominated by a wave barred estuary with extensive intertidal flats, saltmarshes, and sandy shorelines with a narrow entrance to Frederick Henry Bay. Orielton Lagoon is separated from Pitt Water by a causeway constructed in 1868. The whole area is protected from the open sea by a large mid-bay spit and associated dunefield. Most of the Ramsar site is open water fringed by saltmarsh communities, mudflats and rocky shores. The large areas of tidal mud and sand flats leave extensive areas exposed as suitable feeding areas for wading birds and is one of the only two sites in Tasmania included in the East-Australasian Flyway Network. The vegetation communities present include succulent saline herbland, saline sedgeland/rushland and coastal grassland. The site provides breeding habitat for a number of beach-nesting shorebirds including the Caspian Tern and Red-capped Plover. Migratory birds that utilise the Ramsar wetland include the Eastern Curlew, Bar-tailed Godwit, Common Greenshank, Curlew Sandpiper, Double-banded Plover and Red-necked Stint. Threatened species listed in Tasmania recorded at the site include the Great-crested Grebe, Fairy Tern and Little Tern. Pitt Water-Orielton Lagoon was traditionally used by Indigenous people of the area and the Ramsar site contains some middens and other evidence of Indigenous occupation. Currently the area has a diversity of land uses including pastureland grazing, forestry, irrigated cropland, residential development, shellfish aquaculture, recreation and nature conservation. Reference Department of the Environment and Energy. 2017. Pitt Water-Orielton Lagoon, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=6**. Accessed July 2025.
New South Wales	
Hunter Estuary Wetlands	The Hunter Estuary Wetlands Ramsar site is comprised of two components, Kooragang and Hunter Wetlands Centre Australia. The Kooragang component of the Hunter Estuary Wetlands Ramsar site is located in the estuary of the Hunter River, approximately seven kilometres north of Newcastle on the coast of NSW. Hunter Wetlands Centre Australia is 2.5 km from Kooragang. Although the sites are not contiguous, they have significant linkages, both hydrologically and by a wildlife corridor consisting of Ironbark Creek, the Hunter River and Ash Island.

Wetland	Key Features
	The Kooragang component includes Kooragang Island and Fullerton Cove, two areas that lie in the estuarine section of the Hunter River. Kooragang Island originally consisted of seven islands that were mostly separated by narrow mangrove lined channels. In the 1950s these islands were reclaimed and became "Kooragang Island". Habitat types within the Reserve include mangrove forests dominated by Grey Mangrove, Samphire saltmarsh, Paperbark and Swamp she-oak swamp forests, brackish swamps, mudflats, and sandy beaches. Hunter Wetlands Centre Australia is a small but unique complex of wetland types surrounded by urban development along three boundaries. Previously degraded, this urban wetland has been restored. Habitat types at the Hunter Wetlands Centre Australia include restored semi-permanent/seasonal freshwater ponds and marshes, natural semi-permanent/seasonal brackish ponds and marshes, freshwater swamp forests and a coastal estuarine creek. The Hunter Estuary Wetlands Ramsar site is extremely important as both a feeding and roosting site for a large seasonal population of shorebirds and as a waylay site for transient migrants. Over 250 species of birds have been recorded within the Ramsar site, including 45 species listed under international migratory conservation agreements. In addition, the Ramsar site provides habitat for the nationally threatened Green and Golden Bell Frog, Red Goshawk and Australasian Bittern. The Ramsar site was traditionally used by the Worimi, Awabakal and Pambalong peoples. There are numerous middens and campsites scattered throughout the lower Hunter River, particularly within the dunes along Stockton Bight. The Hunter Wetlands Centre Australia also contains an archaeological site that is believed to have been an area for the production of stone tools. Currently, the Kooragang component is used for recreational and nature-based activities. The Hunter Wetlands Centre Australia actively promotes wetland conservation and wise use through communication and education, passive recreation and community involvement. Reference Department of the Environment and Energy. 2017. Hunter Estuary Wetlands, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=24**. Accessed July 2025.
Myall Lakes	The Myall Lakes Ramsar wetland is located within the Myall Lakes National Park, approximately 75 km north of Newcastle on the central coast of NSW. Myall Lakes National Park comprises four main lakes (the Bombah Broadwater, Boolambayte, Two Mile and Myall Lakes), together with the lesser areas of Nerong Creek, sections of the Upper and Lower Myall River, Boolambayte Creek, Fame Cove Inlet and Broughton Island. The Ramsar site incorporates a number of distinct wetlands associated with the waterways and dune systems. The waters of the Myall Lake system are shallow and of roughly uniform depth (2.4–3.7 m) and lake level fluctuations are associated with rainfall rather than tidal influences. The main input of fresh water to the lake system is from the Myall and Crawford Rivers. The Myall Lakes comprise a series of fresh, saline and brackish water bodies of differing depths and associated vegetation types. Myall Lakes support a high plant diversity with 968 species of plants and ten TECs. The major vegetation communities associated with Myall Lakes are: swamp, swamp forest, wet heath, fringe forest and Lepironia swamp. Similarly, the animal species diversity is high and over 300 species have been recorded, with approximately two thirds being bird species. The wetlands regularly support large numbers of waterbirds and waders including ducks, swans, egrets and terns. In addition, Myall Lakes provide habitat for state-listed threatened species such as Masked Owl, Powerful Owl, Black-necked Stork, Wompoo Fruit-Dove, Turquoise Parrot, Little Tern, Little Bent-wing Bat, Tiger Quoll, Eastern Chestnut Mouse and Wallum Froglet. Myall Lakes National Park contains numerous middens, which are the major items of indigenous heritage. No canoe trees have been identified to date, although canoes were obviously used to reach Broughton and Little Broughton Islands.

Wetland	Key Features
	Contemporary use of the Ramsar site is mostly recreational activities such as sailing, swimming, power boating, canoeing, bush walking, four-wheel driving and bird watching. The area is also popular with commercial and recreational fishers. Reference Department of the Environment and Energy. 2017. Myall Lakes, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=52**. Accessed July 2025.
Towra Point Nature Reserve	Towra Point Nature Reserve lies on the northern side of Kurnell Peninsula, forming the southern and eastern shores of Botany Bay, and is approximately 16 km from the Sydney city centre in NSW. It is the largest wetland of its type in the Sydney Basin region and represents vegetation types that are now rare in the area. It is an estuarine complex comprising a mixture of spits, bars, mudflats, dunes and beaches. The Ramsar site consists of a variety of habitats such as seagrass meadows, mangroves, saltmarshes, dune woodlands, Casuarina forest, small occurrences of littoral rainforest and sand dune grasslands. The vegetation within Towra Point Nature Reserve is regionally significant, with the reserve containing around 40% of the remaining mangrove communities and 60% of the remaining saltmarsh communities in Sydney. Furthermore, almost 300 plant species have been recorded within the Ramsar site including the threatened Magenta Cherry. Towra Point Nature Reserve is an important area for bird species, with approximately 200 species recorded in the area. This includes 34 species listed under international migratory bird conservation agreements. Large numbers of Eastern Curlew, Lesser Golden Plover, and Ruddy Turnstone have also been recorded within the Ramsar site. The state-listed threatened Little Tern and Pied Oystercatcher are known to breed within the Reserve. Middens, rock shelters, engravings, burial sites and other items of indigenous heritage have been found within Towra Point Nature Reserve. Captain James Cook anchored in Botany Bay in 1770, and Towra Point was explored, mapped and used as a source of freshwater. It was here where the ship's botanist, Sir Joseph Banks, took the first recognised botanical and zoological samples of Australian flora.

Wetland	Key Features
	The Ramsar site is part of a dedicated Nature Reserve, with activities restricted to nature-based recreation such as bird-watching and fishing. Reference Department of the Environment and Energy. 2017. Towra Point Nature Reserve, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=23**. Accessed July 2025.
Queensland	
Great Sandy Strait (including Great Sandy Strait, Tin Can Bay and Tin Can Inlet)	The Great Sandy Strait Ramsar site is located in south-eastern Queensland and includes Great Sandy Strait, Tin Can Bay, Tin Can Bay Inlet, parts of Fraser Island (K'gari) and the mainland. It is a sand passage estuary between the mainland and the World Heritage-listed Fraser Island. Fraser Island has formed sufficiently close to the mainland to block the flow of a substantial river system, creating a double-ended estuary with a shifting (though relatively stable) pattern of mangroves, sand banks and mud islands. Great Sandy Strait is a large area of tidal swamps consisting of intertidal sand and mud flats, extended seagrass beds, mangrove forests, salt flats and saltmarshes, and often contiguous with freshwater Paperbark wetlands and Coastal Wallum swamps. The mangrove communities within the Strait represent a transition between essentially temperate and tropical species. The rare patterned fens have also been recorded along Great Sandy Strait. The coastal wetlands of Great Sandy Strait are also of international significance for migratory birds, with 18 species listed under international migratory bird conservation agreements recorded within the Ramsar site. The Strait is also utilised by turtle species, Dugong and Humpback Whales. Threatened fish such as Oxleyan Pygmy Perch and Honey Blue-eye are also known to inhabit the area. Great Sandy Strait holds significant cultural heritage values for local indigenous groups. Evidence of occupation in the area dates back 5,500 years and middens are frequently found in the site. The Ramsar site is currently highly valued for commercial fishing, recreational fishing, boating and tourism related activities.

Wetland	Key Features
	Reference Department of the Environment and Energy. 2017. Great Sandy Strait (including Great Sandy Strait, Tin Can Bay and Tin Can Inlet), in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=51**. Accessed July 2025.
Moreton Bay	The Moreton Bay Ramsar site is located in and around Moreton Bay, north-east, east and south-east of the city of Brisbane, in the state of Queensland, Australia. It is located approximately mid-way along the east coast of Australia at a latitude of between 27 and 28 degrees south. The site is in a semi-enclosed basin, bounded on its eastern side by large sand islands and a deltaic coast on the western side, where large rivers discharge to the bay from a combined catchment of approximately 22,000 km2. The bay is approximately 110 km long from north to south and 35 km at its widest east to west axis. The site meets all nine criteria for the designation of wetlands of international importance. It is notable for its large size, diversity of wetland habitats, connectivity between wetland types, as well as diverse flora and fauna that includes threatened species and ecological communities. It contains seagrass, sandy and muddy tidal flats and subtidal areas, saltmarsh, mangroves and coral communities, freshwater wetlands, as well as ocean beaches and dunes. The site includes one of the most extensive intertidal areas of seagrass, mangrove and saltmarsh communities on the eastern coast of Australia, and is valuable for supporting fisheries resources, waterbirds and marine megafauna of conservation significance. The site regularly supports more than 50,000 waterbirds, representing at least 43 species of shorebirds and at least 28 migratory shorebird species. The site is recognised as a network site under the East Asian-Australasian Flyway Partnership (site code EAAF013) and supports over 1% of the estimated flyway population of at least nine migratory shorebird species, including eastern curlew (*Numenius madagascariensis*) and curlew sandpiper (*Calidris ferruginea*), which are listed as critically endangered under national environmental legislation. The site further supports a range of internationally, nationally, state and locally significant species including the Oxleyan pygmy perch (*Nannoperca oxleyana*) fish, four species of acid frogs, the water mouse (*Xeromys myoides*), Illidge's ant-blue butterfly (*Acrodipsas illidgei*), and several freshwater invertebrates. In addition to its environmental values, the site provides important cultural, social, economic and recreational values. Reference Department of Agriculture, Water and the Environment. 2021. Moreton Bay in Australian Wetlands Database. Department of Agriculture, Water and the Environment, Canberra. Available from: **https://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=41** Accessed July 2025.
External Territories	
Elizabeth and Middleton Reefs Marine National Nature Reserve	Elizabeth and Middleton Reefs Marine National Nature Reserve is located in the northern Tasman Sea, in Australia's East Marine Region. It is 630 km east of Coffs Harbour, NSW, and 690 km east-south-east of Brisbane, Queensland. Elizabeth and Middleton Reefs are remote coral reef atolls that occur atop isolated, oceanic sea mounts, 50 km apart from each other.

Wetland	Key Features
	 They are the most southerly open ocean platform reefs in the world and their coral reef communities are influenced both by tropical and temperate ocean currents. As isolated oceanic wetlands with no permanent dry land, the Reef perimeters provide the only buffer to high-energy impacts of ocean swells and waves and thus provide for remote sheltered wetland habitats within a vast region of oceanic waters of the western Pacific Ocean. Reef building corals and algae form the dominant components of habitat complexity and ecological features of the site. Elizabeth and Middleton Reefs support several coral species at or near their northern or southern limits of distribution, and species which can self-recruit to the same reef. Seagrass occurs only as scattered plants on the sheltered sandy lagoons at both reefs. The fish communities include seven undescribed fishes and a number of species with specialised habitats and relatively restricted geographic distributions. The Elizabeth and Middleton Reefs populations of the Galapagos Reef Shark form a single genetic stock, which is distinct from the only other Australian population, 173 km further south at Lord Howe Island. Threatened species known to utilise the site include the Green Turtle, Leatherback Turtle, and Wandering Albatross and listed migratory Humpback Whale. At least 30 ships have been recorded wrecked on the Reefs, dating back to the late 18th Century, making the area of considerable marine archaeological significance. Except for the remains of more recent wrecks, which are a conspicuous feature of the Ramsar site, the majority of wrecks have not been accurately located. The wreck Fuku Maru on Middleton Reef supports a small breeding colony of Sea Terns, which due to lack of suitable dry land, otherwise would not occur at the Ramsar site. Currently, Elizabeth and Middleton Reefs are mainly use for nature conservation and scientific research, with limited recreational diving and fishing also occurring. Reference Department of the Environment and Energy. 2017. Elizabeth and Middleton Reefs Marine National Nature Reserve, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=60#**. Accessed July 2025.

Appendix 2 - Marine and Coastal Zone Wetlands of National Importance

The classification of a 'Marine and Coastal Zone wetlands' is extensive and includes those wetlands that while predominantly based inland have some form of connection with the coast and/or marine waters. The category for 'Marine and Coastal Zone wetlands' includes:

1. Marine waters - permanent shallow waters less than six metres deep at low tide; includes sea bays, straits.
2. Subtidal aquatic beds; includes kelp beds, seagrasses, tropical marine meadows.
3. Coral reefs.
4. Rocky marine shores; includes rocky offshore islands, sea cliffs.
5. Sand, shingle or pebble beaches; includes sand bars, spits, sandy islets.
6. Estuarine waters; permanent waters of estuaries and estuarine systems of deltas.
7. Intertidal mud, sand or salt flats.
8. Intertidal marshes; includes salt-marshes, salt meadows, saltings, raised salt marshes, tidal brackish and freshwater marshes.
9. Intertidal forested wetlands; includes mangrove swamps, nipa swamps, tidal freshwater swamp forests.
10. Brackish to saline lagoons and marshes with one or more relatively narrow connections with the sea.
11. Freshwater lagoons and marshes in the coastal zone.
12. Non-tidal freshwater forested wetlands.

The key features of the wetland sites, as described within the Australian Wetland Database, are provided in Table 7-2.

Table 7-2: Key Features of Nationally Important Wetlands

Wetland	Key Features
South Australia	
Piccaninnie Ponds Karst Wetlands	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
South East Coastal Salt Lakes	***Site description*** A series of four separate lakes of various depth, situated in the interdune corridor between the present and relict coastal dunes. Lake Robe (399 ha), Lake Eliza (4,683 ha) and Lake St. Clair (2,566 ha) are shallow lakes with a fringe of vegetation. Lake George is a deep estuarine lake intermittently connected to the sea, with a surface area of 5916 ha and is surrounded by a fringe of vegetation. Small freshwater ephemeral wetlands exist around the lakes. ***Physical features*** Landform: The wetlands occur on the coastal flat between a low, well-vegetated coastal dune ridge to the west and a relict coastal dune ridge to the east. Geology: Unconsolidated calcareous sands from the Pleistocene uncomfortably lay over Tertiary formed calcrete. Soils: Lake beds consist of black friable loams covered by mud, clay, sand or shellgrit; the dunes surrounding the lakes support deep calcareous sands and shallow red sandy loams. ***Ecological features*** Ecological role: A group of coastal wetlands that act as a refuge for waterbirds in summer or drought. The lakes and the fresh groundwater soaks provide a diverse selection of vegetation structures and wetland habitats for waterbirds. Lake George is a spawning area for two marine fishes, the Yellow-eye Mullet and Flounder. Plant structural formations: Tea-tree scrub, samphire flat, sedgelands and coastal closed scrub.

Wetland	Key Features
	Significance Lake George and Lake Eliza are two of the remaining wintering grounds in the south east of the State for the Orange-bellied Parrot, and Lake George is an important wintering ground for the Double-banded Plover. ***Social and Cultural values*** Cultural: The coastal lakes are rich in Aboriginal heritage with many occupation sites such as middens, rock shelters and open-air campsites at the lake margins. Reference *Department of the Environment and Energy. 2017. South East Coastal Salt Lakes - SA062, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=SA062**.*
Victoria	
Anderson Inlet	***Site description*** Anderson Inlet is one of the largest estuaries on the Victorian coast. ***Physical features*** Geological setting: Quaternary sediment between Tertiary hills and Devonian ridge. A series of spits developed across a former embayment to create the inlet which has infilled with estuarine sediment. Large areas of mudflats are exposed at low tide. ***Ecological features*** The inlet is of high value for its fauna. ***Significance*** (No data) ***Social and Cultural values*** Recreation: Anderson Inlet is very popular for recreational line-fishing. Sailing, powerboating, waterskiing, bait collection and duck hunting are other popular water-based activities here. Research: The Australian Wader Study Group traps, measures and bands migratory and nomadic wading birds in the inlet for biological studies. Reference *Department of the Environment and Energy. 2017. Anderson Inlet - VIC062, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC062**.*
Corner Inlet	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
Glenelg Estuary	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
Lake Bunga	***Site description*** Lake Bunga is a narrow freshwater lagoon and is the former entrance to the Gippsland Lakes. This lake is fed by Bunga Creek and is rarely open to the sea. ***Physical features*** Geological setting: Quaternary lacustrine and paludal sediments overlying Quaternary marine sediments and Tertiary sediments of the Sale/Seaspray Group. ***Ecological features*** This wetland is of high value for its avifauna. ***Significance*** Lake Bunga is a high value wetland for its geological, geomorphological, botanical and ornithological features. ***Social and Cultural values*** (No data) Reference

Wetland	Key Features
	*Department of the Environment and Energy. 2017. Lake Bunga - VIC085, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC085**.*
Lake Connewarre State Wildlife Reserve	***Site description*** The Lake Connewarre State Wildlife Reserve consists of an extensive estuarine and saltmarsh system drained by the Barwon River. It includes a large permanent freshwater lake, a deep freshwater marsh, several semi-permanent saline wetlands and an estuary. ***Physical features*** Geological setting: Quaternary alluvial sediments on Quaternary coastal and aeolian sediments, basalt flows of the Newer Volcanics and sediments of the Tertiary Moorabool Viaduct Formation. ***Ecological features*** The Lake Connewarre State Game Reserve consists of a wide variety of wetland habitats which support a large and diverse waterbird population and contain a significant area of natural vegetation in this part of the South East Coastal Plain. ***Significance*** Lake Connewarre State Game Reserve is a high value wetland for its ecological, recreational and scientific features. Lake Connewarre State Game Reserve is the largest area of native vegetation remaining on the Bellarine Peninsula. Reedy Lake is the largest natural freshwater lake in central Victoria and has outstanding significance due to its large size, floristic richness and structural diversity. The lower two thirds of the estuary is essentially unmodified. ***Social and Cultural values*** Recreation: The Reserve is used for duck hunting and is a good fishing area for Jewfish which has a limited distribution. Windsurfing and boating are popular activities on the river, especially in the estuary. Education: The wetlands are used extensively for teaching purposes. Aboriginal culture: A large oyster midden exists on Campbell Point at Lake Connewarre. <u>Reference</u> *Department of the Environment and Energy. 2017. Long Swamp - VIC030, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC070**.*
Lake King Wetlands	***Site description*** The Lake King Wetlands consist of two large coastal lagoons and associated channels with surrounding salt marshes and brackish to fresh marshes. ***Physical features*** Geological setting: Quaternary lacustrine and paludal sediments on Quaternary alluvial and marine sediments overlying Tertiary sediments of the Sale/Seaspray Group. Lake King contains several islands. ***Ecological features*** These wetlands are of high value for fauna and part of a major drought refuge. ***Significance*** The Lake King Wetlands are high value for ecological, recreational, scientific, cultural and landscape features. They are fine examples of a large coastal lagoon system. The Lake King Wetlands contain two sites of geological/ geomorphological significance: the Mitchell River silt jetties (international) which are on the Register of the National Estate and the Tambo River Delta (state). Mullacky Swamp, two kilometres east of Ocean Grange, is listed as a site of special botanical significance. The Mitchell River Delta silt jetties are one of the finest examples of a

Wetland	Key Features
	digitate delta in the world, these silt jetties almost separate Jones Bay from Lake King. The Tambo River Delta is a major example of the processes of delta growth. ***Social and Cultural values*** (No data) Reference *Department of the Environment and Energy. 2017. Lake King Wetlands - VIC071, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC071**.*
Lake Tyers	***Site description*** Lake Tyers is a branched inlet formed by marine submergence of incised valleys. It has a well-developed tidal delta with marshy islets. ***Physical features*** Geological setting: Quaternary lacustrine and paludal sediments overlying Quaternary marine sediments and Tertiary sediments of the Sale/Seaspray Group. ***Ecological features*** This wetland is of high value for its fauna. ***Significance*** Lake Tyers is a high value wetland for its ecological, recreational, scientific, cultural and scenic features. Lake Tyers is of scenic value for its forested shores and unspoilt character. ***Social and Cultural values*** Recreation: Lake Tyers is popular for camping, fishing, sailing and power boating. Tourism: Large numbers of holiday makers arrive in summer and are exposed to the Little Tern Management Program and commercially chartered boat trips (private) with a naturalist aspect. Aboriginal culture: 18 sites of Aboriginal archaeological significance were recorded in and around Lake Tyers. The local Aboriginal community borders Lake Tyers. Reference *Department of the Environment and Energy. 2017. Lake Tyers - VIC086, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC086**.*
Lake Victoria Wetlands	***Site description*** Lake Victoria is a large coastal lagoon with fringing saltmarsh. It is part of the Gippsland Lakes system. ***Physical features*** Geological setting: Quaternary lacustrine and paludal sediments on Quaternary coastal and aeolian sediments. ***Ecological features*** These wetlands are of high value for their fauna. ***Significance*** Lake Victoria comprises wetlands highly valued for their ecological, recreational, tourist, scientific, educational, cultural and landscape features. Lake Victoria and Blond Bay support a highly productive fish community. This also makes the lakes very important for piscivorous birds such as pelicans, cormorants and terns. Blond Bay State Game Reserve encompasses one of the largest remaining area of natural vegetation on the shores of the Gippsland Lakes. Lake Victoria has thick Swamp Paperbark scrub/closed forest fringing most of the foreshore. The intermittent wetlands making up the Blond Bay system are not common or sufficiently protected in the region. ***Social and Cultural values*** Research: The lakes are scientifically valuable for the study of haloclines and geologically, as part of the Gippsland Lakes system. Recreation: Lake Victoria abuts The Lakes National Park which has a visitor centre and bird hides.

Wetland	Key Features
	Aboriginal culture: Numerous archaeological sites, including a burial site, scarred tree, shell middens, surface scatters and isolated artefacts, occur around Lake Victoria and Blond Bay. Reference *Department of the Environment and Energy. 2017. Lake Victoria Wetlands - VIC072, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC072**.*
Lower Aire River Wetlands	***Site description*** These wetlands consist of three shallow freshwater lakes, brackish to saline marshes and an estuary on the Aire River floodplain. This floodplain occurs at the confluence of the Ford and Calder Rivers with the Aire River. It is surrounded by the Otway Ranges and dune-capped barrier along the ocean shoreline. ***Physical features*** Geological setting: Quaternary alluvium on Quaternary colluvium and alluvium and sediments of the Tertiary Dilwyn Formation and Cretaceous Otway Group. ***Ecological features*** The Lower Aire River Wetlands have extensive beds of Common Reed and groves of Woolly Tea-tree which can support large numbers of waterbirds. These wetlands act as a drought refuge for wildlife. ***Significance*** Lake Hordern is considered to be of State significance for its geomorphology. ***Social and Cultural values*** (No data) Reference *Department of the Environment and Energy. 2017. Lower Aire River Wetlands - VIC091, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC091**.*
Lower Merri River Wetlands	***Site description*** The Lower Merri River Wetlands consist of two connected wetlands developed in a swale between calcareous dune ridges and fed by the Merri River. ***Physical features*** Geological setting: The geology consists of Quaternary lacustrine and paludal sediments overlying colluvium and alluvium, and tuff of the Newer Volcanics. ***Ecological features*** These wetlands are of high value for their avifauna. There are large areas of Common Reed with Spiky Club-sedge, saltmarsh and mudflats. ***Significance*** The Lower Merri River Wetlands are of high value for their geomorphology and are a well-preserved example of interdunal wetlands fed by a small drainage system. ***Social and Cultural values*** Recreation: The wetlands are used for hunting, walking and bird watching. The Mahogany Trail follows the edge of these wetlands. History: The Mahogany Ship is reputed to be buried under sand dunes adjacent to Saltwater Swamp. Aboriginal culture: Surface scatters exist at Kelly Swamp indicating a history of Aboriginal occupation. Reference Department of the Environment and Energy. 2017. Lower Merri River Wetlands - VIC075, in Australian Wetlands Database. Department of the Environment and

Wetland	Key Features
	Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC075**.
Lower Snowy River Wetlands System	***Site description*** The Lower Snowy River Wetlands consist of Lake Corringle, Lake Wat Wat, Lake Curlip, Cabbage Tree Lagoon and numerous other small wetlands on the floodplain of the Snowy and Brodribb Rivers. The area consists of extensive saltmarsh flats and reed beds, paperbark thicket, mud flats and seagrass beds and thus supports a diverse faunal assemblage. ***Physical features*** Geological setting: Quaternary colluvial, alluvial, lacustrine, paludal and marine sediments on Tertiary sediments. ***Ecological features*** These wetlands are of high value for their avifauna and fish. ***Significance*** The Lower Snowy River Wetlands are high value for their ecological, recreational, scientific, educational and scenic values. The wetlands are an excellent example of a floodplain system consisting of a diverse range of habitats and contain extensive areas of Swamp Paperbark, reed beds, salt marsh and mudflats which have been cleared or badly degraded elsewhere throughout the Snowy River floodplain. Similar areas in East Gippsland (i.e. remainder of Snowy River floodplain, Cann River floodplain and Genoa River floodplain) have all been severely degraded through clearing, drainage channels and grazing. Lakes Corringle, Wat Wat and Curlip are of significant conservation value since they support an array of wildlife that may only exist where these remnant pockets of vegetation remain undisturbed. ***Social and Cultural values*** Recreation: The area is a very popular destination for recreation fishermen and boating enthusiasts, particularly during summer months and school holidays. Tourism: Recreation is very important to the economy of Marlo and Orbost. Research: The Lower Snowy River Wetlands continue to be subject to numerous scientific research projects and investigations. The gradual infilling of a large coastal embayment to produce the extensive floodplain of the Snowy and Brodribb rivers has allowed for detailed studies in coastal and estuarine morphologies, evolution of wetland vegetation, and wetland/estuary hydrology. Other studies related to the area include wetland classification, habitat type and water bird distribution and the effect of altering hydrologic regimes. Reference *Department of the Environment and Energy. 2017. Lower Snowy River Wetlands System - VIC087, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC087**.*
Mallacoota Inlet Wetlands	Site description Wetland Atlas numbers: 8822 436430 (Mallacoota Inlet), 8822 526420 (Lake Barracouta), 8822 468412, 8822 472415, 8822 494416. ***Physical features*** Mallacoota Inlet was formed by the submergence of the Genoa and Wallagaraugh River valleys and partial closure of the resulting marine embayment by a sandy barrier and accumulation of dunes. Geological setting: Tertiary sediments and some areas of Ordovician sediments (Mallacoota Beds) and the Kuark Metamorphics underlie most of the Inlet. Islands within the Inlet and the barrier system along the coast (forming Howe Flat and Lake Barracoota) consist of Quaternary coastal and aeolian deposits. The Inlet shoreline consists of low cliffs of sedimentary rock and small sandy beaches. Quaternary swamp and lagoonal deposits occur on Howe Flat and at Lake Barracoota.

Wetland	Key Features
	Ecological features The diversity of flora and fauna in the East Gippsland and adjacent Eden region is high as this area is on the convergence of the cool and warm temperate zones of eastern Australia. The Mallacoota Inlet Wetlands also provide a variety of wetland habitats ranging from estuarine to freshwater, deep inlet waters to sedgelands, and open and closed hydrological s. ***Significance*** Mallacoota Inlet and surrounds are listed on the Register of the National Estate. The Inlet and Howe Flat-Lake Barracoota are listed as of State significance, and Tidal Delta, Goodwin Sands and Allan Head within the Inlet are listed as of Regional significance for geology and geomorphology. North and south Mallacoota Inlet are listed as of State zoological significance. Parts of the Inlet are within the Croajingolong National Park Biosphere Reserve. Lake Barracoota supports important lowland wetland ecosystems and contains a relict marine fauna. ***Social and Cultural values*** Mallacoota and the surrounding district are very popular holiday destination. Recreation: Boating, fishing, bird-watching. Reference *Department of the Environment and Energy. 2017. Mallacoota Inlet Wetlands - VIC133, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC133****.*
Mud Islands	***Site description*** Mud Islands are a group of low, sandy islands located in the southern part of Port Phillip Bay. The islands are narrow and arranged in a roughly circular configuration around a central tidal lagoon. On the southern, western and northern shores, extensive intertidal mudflats and sea-grass meadows are present. ***Physical features*** Geological setting: Quaternary coastal and aeolian sediments. ***Ecological features*** The islands have very high value for fauna since they support large numbers of migratory wading birds and breeding seabirds. ***Significance*** Mud Islands has a high value for its ecological, recreational, scientific, educational and aesthetic features. It has a very high diversity of birds, 114 species, and is an important feeding and roosting site for many migratory birds. The wetland is an unusual offshore saltmarsh island complex providing breeding habitat for many birds. Mud Islands provides a wilderness experience for visitors. ***Social and Cultural values*** Recreation: Mud Islands receives many visitors although it is only accessible by boat. However, visiting the island is not encouraged by the Department of Natural Resources and Environment. Research: The avifauna of Mud Islands has been well documented historically, and the vegetation has been surveyed in detail. Bird banding has been carried out on Mud Islands since 1914. Between 1979 and 1987, 11,300 Silver Gull chicks were banded of which 2% have been recovered. A dense population of the introduced *Carcinus maenas* occurs in the lagoon. The rapidly changing geomorphology makes Mud Islands an ideal place to study plant succession. Education/tourism: Mud Islands is used for excursions by Frankston TAFE and the Victorian Institute of Marine Sciences, which also run summer holiday activities for the general public. Reference *Department of the Environment and Energy. 2017. Mud Islands - VIC077, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC077****.*

Wetland	Key Features
Point Cook & Laverton Saltworks	***Site description*** The coastline of this area comprises rocky shoreline, sandy beaches and spits and large areas of intertidal mudflats and seagrass. Laverton Saltworks consists of shallow evaporation basins and saltmarsh. The Point Cook Coastal Park contains saltmarsh, dune vegetation, grassland, freshwater meadows, fresh to brackish marshes and a saline lake. ***Physical features*** Geological setting: Quaternary coastal, lacustrine, paludal and aeolian sediments overlying basalt flows of the Newer Volcanics. Ecological features The saltworks ponds and Point Cook Lake provide an important habitat for waders, particularly sandpipers, avocets and stilts, and other waterbirds. ***Significance*** The coastline from Point Cook to Skeleton Creek includes wetlands which are high value for their ecological, recreational, scientific, educational and cultural features. The Laverton Saltworks are a very valuable artificial wetland with a range of salinities providing habitat diversity. This salinity range is vital in maintaining the value of the habitat. The active recurving sand spits between the Skeleton Creek mouth and the Laverton Creek mouth are geomorphologically significant. Point Cook Coastal Park has been rated as a site of state botanical significance. ***Social and Cultural values*** Recreation: The Point Cook Coastal Park receives large numbers of visitors and provides recreational facilities. Research: The area has been the study site in a number of research projects such as the banding of Double-banded Plovers by the Australasian Wader Studies Group. It also has detailed historical bird survey data. History: The Point Cook Estate, Point Cook Homestead and the Stables are all listed on the Register of the National Estate, classified by the National Trust and are listed on the Register of the Historic Building Council. Reference *Department of the Environment and Energy. 2017. Point Cook & Laverton Saltworks - VIC116, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC116.*
Powlett River Mouth	***Site description*** (No data) ***Physical features*** Geological setting: Quaternary alluvium on Cretaceous sediment of the Strzelecki Group. ***Ecological features*** The Powlett River Mouth provides valuable habitat for the endangered Orange-bellied Parrot. ***Significance*** (No data) ***Social and Cultural values*** Research: The Powlett River mouth is covered in McMahon et al. (1994) which covers saltmarsh habitats on the Victorian coast. Reference *Department of the Environment and Energy. 2017. Powlett River Mouth - VIC078, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC078**.*
Princetown Wetlands	***Site description*** These wetlands consist of swamps of varying salinity on the floodplains of the Gellibrand River and its tributary, the Serpentine (Latrobe) Creek. Wetlands types present are a deep freshwater marsh, semi- permanent saline marshes and a shallow freshwater marsh.

Wetland	Key Features
	Physical features The Princetown Wetlands occur in the contact area between the Port Campbell Plains, the folded Otway geology and Recent dune deposits. Geological setting: Quaternary alluvium on Tertiary Gellibrand Marl and Dilwyn Formation and Quaternary Bridgewater Formation. ***Ecological features*** The Princetown Wetlands have extensive beds of Common Reed Phragmites australis, and meadows dominated by Beaded Glasswort which can support large numbers of waterbirds. ***Significance*** A series of relict spits adjacent to the Gellibrand Estuary and a number of levee banks at various sites have State significance for their geomorphology. ***Social and Cultural values*** (No data) Reference *Department of the Environment and Energy. 2017. Princetown Wetlands - VIC093, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC093**.*
Shallow Inlet Marine & Coastal Park	***Site description*** Shallow Inlet is a large tidal embayment with a single channel to the sea. The seaward side is enclosed by a sandy barrier complex of spits, bars and mobile dunes. ***Physical features*** Geological setting: Shallow Inlet consists of Quaternary coastal and aeolian sediments deposited in a basin eroded into lower Palaeozoic and Pliocene sediments and enclosed by Pleistocene and Holocene coastal barrier and dune deposits. Large areas of mudflats are exposed at low tide. ***Ecological features*** Shallow Inlet is of high value for its avifauna and flora. ***Significance*** 13 sites of State, regional and local geological and geomorphological significance has been documented for the Shallow Inlet Marine and Coastal Park. ***Social and Cultural values*** Education: Shallow Inlet is used occasionally by local schools for environmental education. Tertiary institutions have used the area as a field study site for post-graduate research, mainly in geology and geomorphology. Research: The formation of the entrance barrier of Shallow Inlet has been studied in Cummins (1989). Tourism: Shallow Inlet is a popular tourist destination offering attractive surroundings and a variety of recreational activities including fishing, sailboarding, swimming, camping and picnicking. It also provides a base for visits to other holiday locations such as Wilsons Promontory and Corner Inlet. Aboriginal culture: Detailed archaeological surveys have discovered rich sites between Shallow Inlet and Darby River. Aboriginal middens are found along the coast west of Shallow Inlet. History: Shallow Inlet and the surrounding area also have a well-documented European history, including maritime history and associated shipwrecks. Reference *Department of the Environment and Energy. 2017. Shallow Inlet Marine & Coastal Park - VIC080, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC080** .*
Swan Bay & Swan Island	***Site description*** Swan Bay is a shallow marine embayment partly enclosed by spits and barrier islands such as Swan Island. It is generally less than two metres in depth, with 700–1,000 ha of mudflats exposed at low tide and has extensive seagrass beds. The bay is fringed with saltmarsh including some extensive flats and there are some

Wetland	Key Features
	stands of remnant woodland, particularly on Edwards Point at the northern end and on the islands on the eastern boundary of the bay. ***Physical features*** Geological setting: Quaternary coastal and aeolian sediments overlying Quaternary alluvial and coastal sediments. ***Ecological features*** The bay is of high value for its avifauna and flora. It is very productive for birds, molluscs and fish. The saltmarsh and intertidal seagrass meadows are regionally significant. The avifauna is particularly diverse, with 190 bird species recorded. ***Significance*** Swan Bay is a high value wetland for its ecological, recreational and educational features. Swan Bay is an unusual shallow embayment with a mixture of seagrass species which is relatively undisturbed and in good ecological condition. ***Social and Cultural values*** Research: Swan Bay has been well researched scientifically and is the subject of many reports. The type specimens of two isopods Haliophasma cycneum and Paranthura boronia held at the Museum of Victoria were collected in Swan Bay. The Marine Science Laboratory of the Department of Natural Resources and Environment at Queenscliff is in close proximity. History: Swan Island has value for historical military relics. Reference *Department of the Environment and Energy. 2017. Swan Bay & Swan Island - VIC081, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC081**.*
Sydenham Inlet Wetlands	Site description Wetland Atlas numbers: 8622 756184 (Sydenham Inlet), 8622 744203, 8622 764199, 8622 765191, 8622 769185, 8622 784209. ***Physical features*** Sydenham Inlet, together with Tamboon Inlet, developed in an embayment between the headlands at Pearl Point and Tamboon South. Bemm River formed a shallow tidal lagoon between two late Pleistocene-Holocene barriers behind a dune and barrier system on Ninety Mile Beach. An exposure of Noorinbee Granodiorite, which forms a small waterfall and rapids, defines the tidal extent of the Inlet. The accumulation of swamp deposits and river sediments has reduced the area and depth of the Inlet and has isolated Mud Lake and Swan Lake from the main wetland. The active cuspate delta of the Bemm River and several abandoned deltas occur on the north side of the Inlet. Geological setting: Sydenham Inlet and Mud Lake occur in a basin of Quaternary alluvium on Tertiary sand and Quaternary beach and dune deposits. Swan Lake was formed on Tertiary sand and Quaternary beach and dune deposits. ***Ecological features*** The Sydenham Inlet Wetlands include a variety of wetland types affected by fresh to saline water, provide a large area of estuarine habitat and support a high diversity of flora and fauna. ***Significance*** Sydenham Inlet is of State significance for its geology and geomorphology. The Inlet, Mud Lake, Swan Lake and the lower Bemm River are of high value for their flora and fauna. Riparian communities such as along the Bemm River near Sydenham Inlet are of high botanical significance. The diversity of fish species and the importance of the Inlet entrance barrier for roosting or nesting terns and shorebirds are particularly notable. ***Social and Cultural values*** Recreation: Fishing, boating, walking, birdwatching.

Wetland	Key Features
	Reference *Department of the Environment and Energy. 2017. Sydenham Inlet Wetlands - VIC134, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC134****.*
Tamboon Inlet Wetlands	***Site description*** Wetland Atlas numbers: 8722 863231 (Lake Furnell), 8722 872188 (Tamboon Inlet). ***Physical features*** Tamboon Inlet, together with Sydenham Inlet, developed in an embayment between the headlands at Pearl Point and Tamboon South. Cann River formed a shallow tidal lagoon between two late Pleistocene-Holocene barriers behind a dune and barrier system on Ninety Mile Beach and bordered by a band of plutonic rock to the east. The Inlet consists of the river channel within a delta, the north and south basins separated by a sand bar and spit, the eastern channel and the entrance barrier complex. Geological setting: Quaternary beach and dune deposits underlie most of Tamboon Inlet and Devonian Noorinbee Granodiorite occurs along the east side of the Inlet. Lake Furnell was formed on Quaternary beach and dune deposits and Tertiary sediments. ***Ecological features*** The Tamboon Inlet Wetlands have a variety of wetland types affected by fresh to saline water which support a diversity of flora and fauna. The Inlet provides a large area of estuarine habitat. ***Significance*** Tamboon Inlet, Lake Furnell and the lower Cann River are of high value for their flora and fauna, particularly the diversity of fish species. Tamboon Inlet is of State significance for its geology and geomorphology. ***Social and Cultural values*** Recreation: Fishing, boating, walking, birdwatching. Reference *Department of the Environment and Energy. 2017. Tamboon Inlet Wetlands - VIC135, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC135****.*
Werribee-Avalon Area	***Site description*** This wetland system contains a variety of habitats, including large areas of intertidal mudflat and seagrass beds, extensive areas of saltmarsh, small stands of White Mangrove Avicennia marina, reed beds, salt evaporation lagoons of the Avalon saltworks and the grass filtration paddocks and sewage treatment lagoons of the Werribee Treatment Complex. ***Physical features*** Natural wetlands include two inter-tidal lagoons (Limeburners Bay and The Spit), two estuaries (Little River and Werribee River), saltmarsh flats and several shallow freshwater marshes. Artificial wetlands comprise salt evaporation ponds (built from saltmarsh and embayments), sewage filtration paddocks and sewage treatment lagoons. Geological setting: Quaternary coastal, lacustrine and paludal sediments and basalt flows of the Newer Volcanics. ***Ecological features (***No data) ***Significance*** The Port Phillip Bay Coastal Study identified Limeburners Bay as a site of geomorphological, floral and faunal interest, and The Spit and the Western Treatment Complex as sites of faunal interest. Limeburners Bay is listed as a site of special scientific interest for its vegetation and its geology and geomorphology. The Spit is also a site of geological and geomorphological scientific interest. These wetlands are

Wetland	Key Features
	of high value for ecological, recreational, tourism, scientific and educational features. They are highly productive and include diverse habitats supporting a wide range and large numbers of waders, ducks, passerines and raptors. ***Social and Cultural values*** Recreation: This wetland system has very high values for birdwatching. Although access is restricted it is within easy reach of Melbourne. The Werribee Treatment Complex is regarded as the best place in Victoria for waterbirds and is internationally renowned. The coastline is heavily used for recreational fishing. Research: Waterbird counts at Werribee are used to monitor the populations of species listed on JAMBA and CAMBA. It is also a study site for many research projects. Orange-bellied Parrots have been extensively studied in the area. Education: The area is close to Melbourne and is used for teaching by universities. Reference *Department of the Environment and Energy. 2017. Werribee-Avalon Area - VIC121, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC121**.*
Western Port	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
Yambuk Wetlands	***Site description*** The Yambuk Wetlands are a network of the estuary of the Eumeralla River and Shaw River (Lake Yambuk), associated freshwater meadows and semi-permanent saline wetlands. ***Physical features*** The wetlands adjacent to Lake Yambuk and the lower Eumeralla River are floodplain depressions separated from the river by low natural levee banks. All these wetlands have formed in the swale between successive barrier complexes. Geological setting: Quaternary lacustrine, paludal, coastal and alluvial sediments on Quaternary colluvium and alluvium and Tertiary sediments. ***Ecological features*** The Yambuk Wetlands are high value for their flora and fauna, and they act as drought refuges. The vegetation consists of extensive reed beds and narrow bands of saltmarsh. ***Significance*** Lake Yambuk is an excellent example of an estuary with extensive overbank swamps. ***Social and Cultural values*** Recreation: Fishing, duck hunting, boating and walking at the river mouth are the main activities. Aboriginal culture: Shell middens, surface scatters and isolated hearths exist in and around Lake Yambuk. Reference *Department of the Environment and Energy. 2017. Yambuk Wetlands - VIC084, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=VIC084**.*
Tasmania	
Boullanger Bay - Robbins Passage	**Site description** Boullanger Bay - Robbins Passage is an extensive area of tidal channels and intertidal mud and sand flats lying between the northwest coastline of Tasmania, and three off-shore islands (Perkins, Robbins and Penguin islands). **Physical features** The site is composed of both estuarine and marine areas, including tidal mud and sand flats, intertidal channels and tidal channels.

Wetland	Key Features
	Ecological features The large area of exposed mud and sand flats at this site provides a feeding ground for resident and migratory waders. Other seabirds are also abundant in the area, using headlands, sandy beaches, dunes and saltmarshes surrounding the area for roosting and nesting. The saltmarsh areas are important for invertebrates, mainly small crustaceans, crabs and snails. **Significance** Boullanger Bay - Robbins Passage attracts the largest numbers of migratory waders in Tasmania and is also a very significant habitat for non-migratory species. It supports a number of bird species which are regarded as significant both nationally and internationally. Among the many birds using the area, there are 13 species which are listed on the following international treaties, the JAMBA and the CAMBA. The area provides the most extensive feeding grounds on an important route for birds migrating across Bass Strait. It is likely that the Orange-bellied Parrot uses this area as a stop-over in its migration across Bass Strait. **Social and Cultural values** There is extensive anecdotal evidence of the long-term use of the area by Tasmanian Aboriginals for various purposes, including hunting and food-gathering. Although it is likely that Aboriginal values of National Estate significance exist at this site, these have not yet been identified or documented. *Reference* *Department of the Environment and Energy. 2017. Boullanger Bay - Robbins Passage - TAS089, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS089*** **Earlham Lagoon** **Site description** An estuarine coastal lagoon/marsh on the south-east coast of Tasmania. Access is possible by 2-wheel drive. **Physical features** The lagoon lies within a coastal swale, overlying Quaternary deposits. The soil is predominantly silt, which is yellow brown in colour with reducing, organic mud. **Ecological features** The site is surrounded by grazing land and therefore the marsh flora has become mixed with exotic grasses. **Significance** The lagoon supports species which are poorly reserved in Tasmania. It is also used by Red-necked Stints which are listed as important species both under the JAMBA and the CAMBA. **Social and Cultural values** The lagoon is valued locally as a recreational area. *Reference* *Department of the Environment and Energy. 2017. Earlham Lagoon - TAS033, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS033**.* **Flyover Lagoon 1** **Site description** Flyover Lagoon is one of a number of shallow, saline coastal lagoons and marshes, which occur on the east coast of Cape Barren Island in the Furneaux group, Bass Strait. Collectively these lagoons are Ramsar listed as the "East-Coast Cape Barren Island Lagoons". This entry pertains to the northern section of Flyover Lagoon. Access to this area is by walking or off-road vehicles. **Physical features** Flyover Lagoon is a dune barred (dammed by Recent calcareous sand dunes) lagoon, which forms part of the Cape Barren dune system. The topsoil is grey sand, with some reducing organic mud. **Ecological features** The wetland is surrounded by heath and coastal scrub and is largely free from invasion by exotic species. Both a Lepilaena cylindrocarpa and

Wetland	Key Features
	Selliera radicans community are present at the site. Many species of waterbirds use the area. **Significance** Flyover Lagoon supports a suite of species and communities which are rare, vulnerable and poorly reserved in Tasmania. The lagoon is part of the Cape Barren dune system, which is considered geologically significant, and is listed in the Tasmanian Geoconservation Database. It is also of cultural significance to the Tasmanian Aboriginal community. **Social and Cultural values** The area is valued as a site for various recreational activities. It is also of significance to the Aboriginal community. *Reference* *Department of the Environment and Energy. 2017. Flyover Lagoon 1 - TAS040, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS040**.*
Flyover Lagoon 2	**Site description** Flyover Lagoon is one of a number of shallow, saline coastal lagoons and marshes, which occur on the east coast of Cape Barren Island in the Furneaux group, Bass Strait. Collectively these lagoons are Ramsar listed as the "East-Coast Cape Barren Island Lagoons". This entry pertains to the southern section of Flyover Lagoon. Access to this area is by walking or off-road vehicles. **Physical features** Flyover Lagoon is a dune barred (dammed by Recent calcareous sand dunes) lagoon, which forms part of the Cape Barren dune system. There are deep sandy soils throughout and some areas of plain formed on Quaternary siliceous marine sands and clays. **Ecological features** The wetland is surrounded by heath and coastal scrub and is free from invasion by exotic species. This basin is important for its Eleocharis pusilla sedgeland community. Many species of waterbirds use the area. **Significance** Flyover Lagoon supports a suite of species and communities which are rare, vulnerable and poorly reserved in Tasmania. The lagoon is part of the Cape Barren dune system, which is considered geologically significant, and is listed in the Tasmanian Geoconservation Database. It is also of cultural significance to the Tasmanian Aboriginal community. This site is visited by White-bellied Sea Eagles which are listed as an important species under the CAMBA. **Social and Cultural values** The area is valued as an area for recreational activity and also holds cultural significance for the Tasmanian Aboriginal community. *Reference* *Department of the Environment and Energy. 2017. Flyover Lagoon 2 - TAS041, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS041**.*
Lavinia Nature Reserve (Lake Martha Lavinia, Sea Elephant Wildlife Sanctuary, Nook)	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1.
Little Thirsty Lagoon	**Site description** Little Thirsty Lagoon is one of a number of shallow, saline coastal lagoons and marshes, which occur on the east coast of Cape Barren Island, in the

Wetland	Key Features
	Furneaux group, Bass Strait. Collectively these lagoons are listed on the Convention on Wetlands as the "East-Coast Cape Barren Island Lagoons". Access to this area is by walking or trail bikes. **Physical features** The topsoil is inorganic, aerated red-brown sand. Ecological features The lagoon supports a diverse aquatic flora community and is also utilised by many migratory birds. **Significance** Little Thirsty Lagoon supports a suite of species and communities which are rare and poorly reserved in Tasmania and also a species which is vulnerable at a national level. The lagoon is also an important site for a number of migratory birds listed under the CAMBA and/or the JAMBA. **Social and Cultural values** The lagoon is of cultural significance to the Tasmanian Aboriginal community. *Reference* *Department of the Environment and Energy. 2017. Little Thirsty Lagoon - TAS043, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS043**.*
Logan Lagoon	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
Maria Island Marine Reserve	**Site description** The Maria Island Marine Reserve is the seaward extension of the Maria Island National Park, off the east coast of Tasmania. The reserve runs from around the shoreline out to the 20 m depth contour, about one kilometre offshore. **Physical features** Fossil Bay, on the island's west coast, is characteristically limestone, containing numerous large caverns, whereas rounded granite blocks with moderate cave development occur along most of the eastern coast of the island. Dolerite and folded, argillite reefs are found between these two areas. The east coast reefs drop quickly to considerable depths (40+ m) and experience maximal wave exposure. The sheltered reefs of Shoal Bay are very shallow and have a broken topography of small dolerite boulders. The sandstone reefs near Howells Point are usually submerged under sand in shallow water, but where they extend to greater depths, long gutters and ledges are found. **Ecological features** There are extensive seagrass beds and fish nurseries in Mercury Passage (between Maria Island and mainland Tasmania) and sandstone reefs at Howells Point. Forests of giant kelp (15-20 m), rocky reefs and large underwater caverns are found in Fossil Bay. The marine communities around Maria Island occur on a variety of substrates and have a rich diversity of flora and fauna. **Significance** Maria Island Marine Reserve protects a representative range of the marine communities found along Tasmania's east coast. It is one of only a few formal marine reserves in Tasmania. The marine area is the most significant representation of the Maugean biogeographic province reserved in Tasmania. It provides an important breeding refuge for species which are commercially fished. The Fossil Cliffs, part of the Marine Reserve, is a site of international geoconservation significance for its well-preserved marine fossils. The site is also used by a number of bird species which are listed under the JAMBA and the CAMBA.

Wetland	Key Features
	Social and Cultural values The Marine Reserve has significant aesthetic and recreational values, including large underwater caverns, sandstone reefs and seagrass beds of interest to the snorkeler or diver. *Reference* *Department of the Environment and Energy. 2017. Maria Island Marine Reserve - TAS036, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS036*** **Moulting Lagoon** This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
Pearshape Lagoon 1 **Pearshape Lagoon 2** **Pearshape Lagoon 3** **Pearshape Lagoon 4**	**Site description** A group of coastal lagoons on the southwest coast of King Island (Bass Strait). Access is possible by 2-wheel drive. **Physical features** The lagoons have an inflowing channel. Pearshape lagoons occur within coastal swales overlaying Quaternary calcareous sands. The soil is predominantly sand, which is white in colour with medium organic content. **Ecological features** The wetlands support communities of mixed sedges and grasses, with flooded tea tree scrub in some areas. **Significance** The wetlands are good representative wetlands for the region and are visited by a diverse range of waterbirds. **Social and Cultural values** This area is valued by locals as it is a suitable area for recreational shooting. *Reference* *Department of the Environment and Energy. 2017. Pearshape Lagoon 1 - TAS076, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS076**. Accessed 25 Jul 2017.* *Department of the Environment and Energy. 2017. Pearshape Lagoon 2 - TAS077, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS077**.* *Department of the Environment and Energy. 2017. Pearshape Lagoon 3 - TAS078, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS078** .* *Department of the Environment and Energy. 2017. Pearshape Lagoon 4 - TAS079, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS079**.*
Pitt Water and Orielton Lagoon	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
Rocky Cape Marine Area	**Site description** A marine area off the coast of Rocky Cape National Park, on the northwest coast of Tasmania. **Physical features** The rugged coastline at Rocky Cape National Park maintains its jagged nature underwater. Offshore from the headlands are rocky reefs that extend

Wetland	Key Features
	to depths greater than 20 m. The folded quartzite extends as a series of parallel ridges containing long, overhanging caves which follow the strike of the rock. The boulder beaches give way to sea grass beds in very shallow water. Wave exposure around the coast is moderate, although water clarity during calm weather can reach up to 20 m. **Ecological features** The extensive caves and high structural relief, together with the range of wave exposures found in the area, result in particularly high biotic diversity. The lower eulittoral zone contains bands of the seaweeds, Hormosira banksii and Cystophora torulosa. Below these species occurs a zone of Cystophora moniliformis which merges with Caulerpa brownii and a suite of other seaweeds. Numerous other species are found in the area. As a result of the relatively low wave energy and considerable cave development at Rocky Cape, a large number of fragile, erect animals grow on rock faces, even in shallow water. The Rocky Cape fish fauna contains many warm temperate species as well as numerous cool temperate species including cave dwelling species. The abundance of the slow-moving, edible Boarfish, Pentaceropsis recurvirostris, indicates that the area has not been spearfished extensively. **Significance** The Rocky Cape Marine Area is a representative wetland type. It is an important site due to its species-diverse marine communities and pollution-free waters. It also supports a species which is thought to be rare in Tasmanian waters. **Social and Cultural values** The area is used by the community for recreational activities such as scuba diving, snorkelling, fishing and boating. Reference *Department of the Environment and Energy. 2017. Rocky Cape Marine Area - TAS080, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS080**.*
Syndicate Lagoon	**Site description** Syndicate Lagoon is part of a chain of lagoons and marshes occurring down the eastern coast of Flinders Island (Bass Strait). Access is possible by 4-wheel drive. **Physical features** The lagoon occurs on Quaternary calcareous sands with some reducing organic muds. **Ecological features** The area is relatively undisturbed and there are representative examples of coastal vegetation around the lagoon. Swans (Cygnus atratus) and other waterfowl breed in winter in the fringe of Juncus tussocks around Syndicate Lagoon. As the water recedes in summer, wading birds feed on the exposed sand and mudflats. The lagoon is rich in nutrients and provides abundant food for waterbirds. The wetland complex is a refuge for waterfowl during the shooting season, and a resting and feeding area for migratory birds. **Significance** Syndicate Lagoon supports communities which are poorly reserved in Tasmania and provides an important habitat for a range of migratory waterbirds. The lagoon is visited by a number of migratory bird species listed under the CAMBA and/or the JAMBA. **Social and Cultural values** (No data) Reference *Department of the Environment and Energy. 2017. Syndicate Lagoon - TAS047, in Australian Wetlands Database. Department of the Environment and Energy,*

Wetland	Key Features
	Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS047***
The Chimneys (Lower Ringarooma River floodplain)	**Site description** The wetland area is situated on the sandy flood plain of the Lower Ringarooma River (northern Tasmania) and is surrounded by woodland used for rough grazing. Access to the site is by 4-wheel drive. **Physical features** The Chimneys may represent the remnants of a once more extensive lake system. The area consists of flat plains of Quaternary clays, sands and gravels. Silty clay soil overlays a deep grey sand, with silt content decreasing with depth. The silt is derived from tin mining activity in the river catchment. **Ecological features** The area is dominated by scrub and tussock grassland vegetation and includes substantial areas of freshwater marsh habitat in the floodplain. There are also lagoons and dunes which support a rich variety of invertebrate fauna. **Significance** This site has been listed under the Convention on Wetlands of International Importance. The area supports a number of species which are rare or vulnerable and are poorly reserved in Tasmania. The area has a rich diversity of invertebrate fauna. The Chimneys are also an important feeding and nesting place for many species of waterbird. Its geoscientific significance relates to its age, as it could be older than other lakes in the area (having a possible Pleistocene age being situated well within known Pleistocene dunefields). If so, it is of considerable interest from a palynological and palaeobotanical perspective. The Chimneys may have important subfossil potential such as megafaunal remains. **Social and Cultural values** The area was used by Aboriginal people and has a long history of European occupation and mining exploitation. Limited use is made of the area for duck shooting and cattle grazing. Reference *Department of the Environment and Energy. 2017. The Chimneys (Lower Ringarooma River floodplain) - TAS005, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS005****.*
Tregaron Lagoons 1	**Site description** A coastal lagoon, partly in the private Cape Portland Wildlife Sanctuary (north-east Tasmania). Access is possible by 2-wheel drive. **Physical features** Holocene dune barred lagoon situated in a restricted transgressive dunefield in relation to other parts of the region. The soil is predominantly sand (overlaying Jurassic dolerite and Quaternary deposits), which is grey in colour with medium peat content. **Ecological features** Crassula helmsii herbfield is found in this wetland, where the dominant species forms a low, closed sward with the co-dominants Myriophyllum propinquum and Mimulus repens. **Significance** The lagoon supports species and communities which are rare and poorly reserved in Tasmania and a species which is listed as nationally vulnerable. It is important for comparative geomorphological studies for its value in the understanding of Holocene coastline development. This site supports a group of species which are listed as important under both the CAMBA and/or the JAMBA. **Social and Cultural values** (No data)

Wetland	Key Features
	Reference *Department of the Environment and Energy. 2017. Tregaron Lagoons 1 - TAS006, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS006***
Tregaron Lagoons 2	**Site description** A coastal lagoon, part of which is reserved in the private Cape Portland Wildlife Sanctuary (north-east Tasmania). Access is possible by 2-wheel drive. **Physical features** Holocene dune barred lagoons situated in a restricted transgressive dunefield in relation to other parts of the region. The soil is predominantly sand (overlaying Jurassic dolerite and Quaternary deposits), which is grey in colour with medium peat content. **Ecological features** The lagoon is visited by a high diversity of waterbirds. The wetland contains a Mimulus repens herbfield, whilst the dominant emergent species include Juncus sp., Triglochin spp. and Phragmites sp. **Significance** The lagoon supports species and communities which are rare and poorly reserved in Tasmania and a species which is listed as nationally vulnerable. It is important for comparative geomorphological studies for its value in the understanding of Holocene coastline development. The site is visited by a number of important migratory species which are listed under the CAMBA and/or the JAMBA. **Social and Cultural values** (No data) Reference *Department of the Environment and Energy. 2017. Tregaron Lagoons 2 - TAS007, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS007****.*
Unnamed Wetland TAS010	**Site description** A coastal lagoon, part of which lies within the private Cape Portland Wildlife Sanctuary (north-east Tasmania). Access is possible by 2-wheel drive. **Physical features** The wetland occurs within a coastal swale overlaying Jurassic dolerite and Quaternary deposits. The soil is predominantly sand, which is grey in colour with medium organic content. **Ecological features** This wetland supports a Wilsonia rotundifolia herbfield. **Significance** The wetland supports species and communities which are rare and poorly reserved in Tasmania. It forms part of a band of wetlands in the area. **Social and Cultural values** (No data) Reference *Department of the Environment and Energy. 2017. Unnamed Wetland - TAS010, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS010****.*
Unnamed Wetland TAS012	**Site description** A coastal lagoon, part of which is in the Musselroe Bay Conservation Area (north-east Tasmania). Access is possible by 2-wheel drive. **Physical features** The wetland occurs within a coastal swale overlaying Quaternary deposits. The soil is predominantly sand, with high organic content.

Wetland	Key Features
	Ecological features The site supports a saltmarsh community. **Significance** The wetland supports species which are rare and poorly reserved in Tasmania. It has evolved as part of a bay mouth spit complex which is significant as it is both undisturbed and poorly reserved in the State. **Social and Cultural values** Valued as an area for recreational activities such as boating and fishing. Reference *Department of the Environment and Energy. 2017. Unnamed Wetland - TAS012, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS012.*
Unnamed Wetland TAS051	**Site description** This lagoon is one of a number of shallow, saline coastal lagoons and marshes, which occur on the east coast of Cape Barren Island, in the Furneaux group, Bass Strait. Collectively these lagoons are listed on the Convention on Wetlands as the "East-Coast Cape Barren Island Lagoons". Access to this area is by walking or off-road vehicle. **Physical features** There are deep sandy soils throughout and some areas of plain formed on granite and Quaternary siliceous marine sands and clays. This particular small, brackish wetland is perched in the coastal sand dune system. The topsoil is inorganic, aerated dark grey-brown sand. **Ecological features** This site is sparsely vegetated, but free from invasion of exotic species. **Significance** The lagoon supports species which are considered rare and poorly reserved in Tasmania and nationally and provides an important habitat for a range of migratory waterbirds, some of which are listed under the CAMBA and/or the JAMBA. **Social and Cultural values** The area surrounding the wetland is valued as a site for recreational activities. Reference *Department of the Environment and Energy. 2017. Unnamed Wetland - TAS051, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS051**.*
Unnamed Wetland TAS052	**Site description** This lagoon is one of a number of shallow, saline coastal lagoons and marshes, which occur on the east coast of Cape Barren Island, which is in the Furneaux group in Bass Strait. Collectively these lagoons are listed on the Convention on Wetlands as the "East-Coast Cape Barren Island Lagoons". Access is possible by walking or off-road vehicles. **Physical features** The wetland is barred by a foredune overlaying granite and sands. The soil is predominantly sand, which is grey in colour with low organic content. **Ecological features** This site is important for large numbers of migratory waterbirds. The vegetation community surrounding the margins of the lagoon is an open herbfield. **Significance** The lagoon supports species and communities which are considered rare and poorly reserved in Tasmania, and a species which is vulnerable on a national level. It is also used by species which are listed under the CAMBA and/or the JAMBA.

Wetland	Key Features
	Social and Cultural values The area including and surrounding this wetland has important recreational values. Reference *Department of the Environment and Energy. 2017. Unnamed Wetland - TAS052, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS052****.*
Unnamed Wetland TAS081	**Site description** A coastal wetland in the far northwest of Tasmania. Access is possible by 2- wheel drive. **Physical features** The wetland occurs within a coastal swale overlaying metamorphosed fine-grained rocks. The soil is predominantly sand, which is grey in colour with medium organic content. **Ecological features** A Hydrocotyle muscosa herbfield occurs within this wetland, where the dominant species form low, mostly closed swards and is commonly associated with Crassula helmsii, Eleocharis acuta, Lilaeopsis brownii and Selliera radicans. Villarsia reniformis aquatic community, also found in this wetland, forms a dense cover, with the co- dominant species Myriophyllum propinquum, Isolepis fluitans and Triglochin procera. **Significance** This site is an important representative wetland for the region. It is of further importance as it supports communities which are poorly reserved in Tasmania. **Social and Cultural values** The area is valued as an important site for recreational activities such as fishing. Reference *Department of the Environment and Energy. 2017. Unnamed Wetland - TAS081, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=TAS081****.*
New South Wales	
Avoca Lagoon	***Site description*** A shallow, brackish lagoon with extensive *Phragmites australis* rushlands. Large *Juncus kraussii* reedlands occur in the northern arm. Swamp forests of *Melaleuca quinquenervia* and *Casuarina glauca* surround most of the northern and western arms and are also found on the island. There are dense growths of aquatic grasses and algae, especially in the northern arm. The bottom is mainly silt but is sandier near the entrance. ***Physical features*** (No data) ***Ecological features*** (No data) ***Significance*** In Fair Condition. There is a high nutrient input from septic tanks, urban runoff and fertilisers used in the rural part of the catchment. The narrow opening of the southern arm of the lake restricts water movement. This section of the lake is showing increased rates of eutrophication. The lagoon is being dredged for sand, thus increasing turbidity and disturbance of aquatic habitats. Frequent artificial opening has unknown effects. ***Social and Cultural values*** The lake is an important tourist attraction and recreation area. It is a good nesting and feeding area for ducks, moorhens and other waterbirds. Reference

Wetland	Key Features
	*Department of the Environment and Energy. 2017. Avoca Lagoon - NSW181, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW181**.*
Beecroft Peninsula	**Site description** The Commonwealth component of the Beecroft Peninsula consists of the area known as the Beecroft Weapons Range and covers almost all of the Peninsula except a strip of land in the northern end that contains the township of Currarong and Abrahams Bosom Reserve, and an area to the west of the Beecroft Weapons Range that is NSW NPWS land. The vegetation is diverse (573 species) and of high conservation value (8 ROTAP species recorded). Physical features The Beecroft Peninsula forms the northern headland of Jervis Bay and is a remnant of a Permian coastal plateau that slopes north and east from high ocean cliffs to the gentler shore of the Bay. The area supports a high diversity of vegetation types within a small area including mangroves, saltmarsh and freshwater swamps, heathland, eucalypt forest and sub-tropical and littoral rainforest. On the northern boundary of the range (outside of the Commonwealth area) is Lake Wollumboola, which is the largest shallow saline lagoon on the south coast of NSW. The Lake is seldom open to the sea. Wowly Gully, in the north-west corner of the Peninsula, consists of a series of interconnected pools and is fringed by sandflats and swamps. The gully is frequently open to Jervis Bay at which time it becomes a tidal channel. **Ecological features** The peninsula supports a variety of wetland units with varying vegetation types, including: Casuarina glauca swamps with a shrub and sedge understorey; Low lying swamps supporting Phragmites australis, Melaleuca ericifolia, Baumea teretifolia, Baumea articulata and Leptospermum juniperinum; stream swamps occur in the catchment of Duck creek with dominant species including Gahnia clarkei and Gleichenia microphylla; swampy thicket occurs on low lying land between heathland and low lying swamp with common species being; Allocasuarina littoralis, Epacris microphylla, and Melaleuca thymifolia; and mangroves Avicennia marina found on tidal mudflats. Other habitat types include coastal scrub, wet and dry heath, small and large crowned eucalypt forests, Terpentine and rainforest. The lower saltmarsh of Lake Wollumboola is a mosaic of two communities, one dominated by the uncommon Wilsonia backhousei and the other is dominated by Sarcocornia quinqueflora. Grey mangrove Avicennia marina occurs in patches at Chinamans Beach, but fringes Cararma inlet behind which are areas of saltmarsh. The most striking feature is the presence of the Chenopod Sclerostegia arbuscula which is only known from a few sites in NSW. Significance The area supports a high diversity of vegetation types within a small area and a variety of wetland types. A number of threatened flora and fauna species are present. **Social and Cultural values** The Point Perpendicular lighthouse includes residences and ancillary structures representing early construction methods using pre-cast concrete block masonry employing sandstone aggregate from the site. There are a large number of aboriginal sites recorded on the peninsula including art sites, middens, scarred trees and campsites. <u>Reference</u> *Department of the Environment and Energy. 2017. Beecroft Peninsula - NSW176, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW176**.*

Wetland	Key Features
Bondi Lake	***Site description*** (No data) ***Physical features*** Bondi Lake is an example of a Simple Embayment Lake. Embayment lakes are formed in the same formative process as in drowned valley lakes, except that in this case a bay is cut off. Such lakes were formed in the Holocene marine transgression. The lake lies in a broad depression behind the frontal dune. ***Ecological features*** Bondi Lake is a freshwater lake located in an area whereby the surrounding waterbodies exhibit varying degrees of salinity. The lake supports a range of freshwater flora and fauna species, little documentation exists. ***Significance*** (No data) ***Social and Cultural values*** Former school house located at the northern end of Bondi Lake Reference *Department of the Environment and Energy. 2017. Bondi Lake - NSW116, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW116****.*
Brisbane Water Estuary	**Site description** (No data) **Physical features** The estuary of Brisbane Water is a relatively small (27 km2) broad, shallow estuary connected to Broken Bay through a narrow channel. The estuary is entirely within the City of Gosford. Ecological features Two species of mangroves occur, Grey Mangrove (Avicennia marina) and River Mangrove (*Aegiceras corniculatum*) and cover an area of 163 ha; Saltmarsh covers an area of 95 ha, mostly in the Cockle Bay Nature Reserve and Rileys Island Nature Reserve. Intertidal seagrass beds are extensive and are shown on the attached map. Brisbane Water is important feeding area for migratory waders and for waterbirds generally. Swans arrive in spring and summer in the estuary to feed on the extensive seagrass beds. The area is also important as a nursery and spawning ground for fish and crustaceans. **Significance** (No data) **Social and Cultural values** Around 100,000 people live around Brisbane Water, there is an important commercial fishery and oyster farming industry based in the estuary and the area is well known as an amateur fishing area. Marinas operate around the estuary and there are many sailing and motorboat clubs operating on the lakes and in the estuary. Reference *Department of the Environment and Energy. 2017. Brisbane Water Estuary - NSW132, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW132***
Bundjalung National Park	***Site description*** (No data) ***Physical features*** The geology of Bundjalung National Park consists primarily of areas of Quaternary sediments including alluvium, gravel, sand, silt, clay and areas of beach and dune sand. The geology of the remaining area consists of Triassic - Jurassic sediments of the Bendamba Group including sandstone, shale, and conglomerate). Soils of Bundjalung National Park include siliceous sands, sand podzols, humus podzols, acid peats, and Quaternary estuarine deposits. These soils are sandy, poorly structured and infertile. Examples of the dune and swale complex which was formed during the Pleistocene are contained in Bundjalung National Park. ***Ecological features*** Bundjalung National Park consists of a dunal wetland system, consisting of a mosaic of wet heath, sedgeland, dry heath, forested swamp and

Wetland	Key Features
	sclerophyll forest south of Evans Head. In the southern area of the National Park swamp sclerophyll forests grade to saltmarsh and mangroves in intertidal areas. The central area comprises predominantly of wet heathland and sedgeland communities. ***Significance*** This large complex of dunal wetlands is in a relatively natural condition and is considered to be a representative example of coastal dunal wetlands. ***Social and Cultural values*** Evidence of Aboriginal occupation of the area covered by Bundjalung National Park includes middens, campsites, mythological sites, a fish trap made of rock at Woody Head, stone tool workshops and bora ceremonial grounds. Goanna Headland which lies adjacent to Bundjalung National Park has particular mythological significance to the local Aboriginal community. There is a Native Title claim over the park, and it is likely that some form of joint management will occur in the future. Bundjalung has been used for military purposes since World War II. Disused bunkers associated with target practice ranges are located in the central area of Bundjalung National Park. In the past the coastal areas of the National Park have been used for fishing, recreation, bee keeping and limited cattle grazing. A miners cottage, erected in 1923 still stands near Woody Head. Possible opportunities for scientific studies and educational purposes. Reference *Department of the Environment and Energy. 2017. Bundjalung National Park - NSW026, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW026****.*
Clarence River Estuary	**Site description** (No data) **Physical features** The geology of the area consists of Quaternary sediments including alluvium, gravel, sand silt, clay overlying the Cretaceous-Jurassic Kangaroo Creek Sandstone. **Ecological features** Estuary of largest coastal river in NSW (based on discharge and catchment area, and associated mangrove, seagrass and saltmarsh areas. Four species of mangrove occur within the Clarence Estuary including the River Mangrove (Aegiceras corniculatum), Grey Mangrove (Avicennia marina var. australasica), Black Mangrove (Bruguiera gymnorrhiza) and the Milky Mangrove (Excoecaria agallocha). Dominant species in saltmarsh include Samphire (Sarcocornia quinqueflora) and Salt Couch (Sporobolus virginicus). Rainforest trees, shrubs and vines are also a prominent feature of the estuary. **Significance** A number of wetlands within the Clarence Estuary are SEPP 14 wetlands; these include Freeburn, Thorny, Micalo, Dart, Hickey and Rabbit Islands. Social and Cultural values The Clarence Estuary was utilised by Aborigines for fishing and evidence of this includes oyster shell middens that have been recorded on Micalo Island. In the early 1800's Richard Craig pioneered the harvesting of extensive Red Cedar stands of the Clarence. Cropping began with sugar cane farms in 1864 on the Clarence River floodplain. Reference *Department of the Environment and Energy. 2017. Clarence River Estuary - NSW027, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW027****.*
Clybucca Creek Estuary	***Site description*** (No data) ***Physical features*** The geology of the Clybucca Creek Estuary comprises of Quaternary sediments including alluvial, paludal and estuarine deposits, mainly sands silts and gravel.

Wetland	Key Features
	Ecological features Wetlands consisting of 520 ha of mangroves, 191 ha of seagrasses, and 365 ha of saltmarsh. Mangrove species within the estuary include Grey Mangrove (*Avicennia marina*), River Mangrove (*Aegiceras corniculatum*), Milky Mangrove (*Excoecaria agallocha*). The saltmarsh community include species such as Couch (*Sporobolus virginicus*), Sedge (*Cyperus polystachyos*), Sea Rush (*Juncus kraussii*), the Sedge *Fimbristylis ferruginea*, Seaberry Saltbush (*Rhagodia candolleana* ssp. *candolleana*) and, Ruby Saltbush (*Enchylaena tomentosa*). Freshwater swamp forest also occurs along the estuary and includes species such as Paperbark (*Melaleuca quinquenervia*), Willow Bottlebrush (*Callistemon salignus*) and Swamp Oak (*Casuarina glauca*). Fauna species recorded within the estuary include the Australian White Ibis (*Threskiornis molucca*), Straw-necked Ibis (*Threskiornis spinicollis*), Pied Oystercatcher (*Haematopus longirostris*), Pelican (*Pelecanus conspicillatus*), Whimbrel (*Numenius phaeopus*), White-bellied Sea-eagle (*Haliaeetus leucogaster*), Pied Cormorant (*Phalacrocorax varius*), Little Pied Cormorant (*Phalacrocorax melanoleucos*), Welcome Swallow (*Hirundo neoxena*), Azure Kingfisher (*Alcedo azurea*), Willie Wagtail (*Rhipidura leucophrys*), Jacky winter (*Microeca fascinans*), Red-bellied Black Snake (*Pseudechis porphyriacus*), and the Echidna (*Tachyglossus aculeatus*). ***Significance*** (No data) ***Social and Cultural values*** Evidence of Aboriginal occupation of the wetland includes midden sites at Stuarts Point and Shark Island. The Macleay middens are unique as a surviving complex and are probably the largest deposits of their sort still intact. Other Aboriginal sites which occur within the estuary include burial sites, ceremonial grounds and carved trees. *Reference* *Department of the Environment and Energy. 2017. Clybucca Creek Estuary - NSW028, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW028**.*
Clyde River Estuary	**Site description** (No data) **Physical features** The geology of the Clyde River estuary consists primarily of Ordovician sediments including siltstone, claystone, sandstone, quartzite and chert. with some areas around the mouth of the estuary consisting of Quaternary sediments including alluvium gravel, swamp deposits and sand dunes. **Ecological features** A relatively south coast estuary, which supports areas of mangrove including River Mangrove (Aegiceras corniculatum) and Grey Mangrove (Avicennia marina) (3200 ha), seagrass (70 ha) and saltmarsh (100 ha). Other common flora species include Common Reed (Phragmites australis), Sea Rush (Juncus krausii), Sheoaks (Casuarina spp.), Eucalyptus spp., Long-leaved Wallaby Grass (Danthonia longifolia). Relatively rich zooplankton fauna is found in the estuary. Many native fish are found in the estuary including Australian Smelt (Retropinna semoni), Australian Bass (Macquaria novemaculeata), and the Australian Grayling (Prototroctes maraena). Fauna species which occur in the area include the Common Eastern Froglet (Crinia signifera), Brown Striped Frog (Limnodynastes peronii), Brown Tree Frog (Litoria ewingii), Lace Monitor (Varanus varius), Grass Skink (Lampropholis delicata), Red-bellied Black-snake (Pseudechis porphyriacus), Striated Heron (Butorides striatus), Buff-banded Rail (Gallirallus philippensis), Purple Swamphen (Porphyrio porphyrio), Masked Lapwing (Vanellus miles), Brown Cuckoo-Dove (Macrophygia amboinensis), Gang-gang Cockatoo (Callocephalon fimbriatum), Musk Lorikeet (Glossopsitta concinna), Little Lorrikeet (Glossopsitta pusilla), Crimson Rosella (Platycercus elegans), Australian Owlet-nightjar (Aegotheles cristatus), Laughing

Wetland	Key Features
	Kookaburra (Dacelo novaeguineae), Sacred Kingfisher (Todiramphus sanctus), Striated Thornbill (Acanthiza lineata), Brown Thornbill (Acanthiza pusilla), White-throated Gerygone (Gerygone olivacea), Spotted Pardalote (Pardalotus punctatus), White-browed Scrubwren (Sericornis frontalis), Eastern Spinebill (Acanthorhynchus tenuirostris), Yellow-faced Honeyeater (Lichenostomus chrysops), Lewin's Honeyeater (Meliphaga lewinii), White-naped Honeyeater (Melithreptus lunatus), Scarlet Honeyeater (Myzomela sanguinolenta), Eastern Yellow Robin (Eopsaltria australis), Eastern Whipbird (Psophodes olivaceus), Grey Shrike-thrush (Colluricincla harmonica), Crested Shrike-tit (Falcunculus frontatus), Rufous Whistler (Pachycephala rufiventris), Spangled Drongo (Dicrurus bracteatus), Leaden Flycatcher (Myiagra rubecula), Grey Fantail (Rhipidura fuliginosa), Rufous Fantail (Rhipidura rufifrons), Double-barred Finch (Taeniophygia bichenovii), Brown Antechinus (Antechinus stuartii), Feathertail Glider (Acrobates pygmaeus), Greater Glider (Petauroides volans), Sugar Glider (Petaurus breviceps), Swamp Wallaby (Wallabia bicolor), Gould's Long-eared Bat (Nyctophilus goudli), Little Forest Eptesicus (Vespadelus vulturnus), Bush Rat (Rattus fuscipes), and Leopard Seal (Hydrurga leptonyx). **Significance** (No data) Social and Cultural values The area was populated by the Yuin group of Aboriginal tribes who probably set up permanent camps near the river. Several middens have been recorded near the mouth of the estuary. The coastal areas provided plentiful food and were favoured by the Aboriginal people. Europeans have utilised the area for forestry purposes since around the 1820s. Reference *Department of the Environment and Energy. 2017. Clyde River Estuary - NSW059, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW059**.*
Cockrone Lagoon	***Site description*** A shallow brackish lagoon with extensive *Phragmites australis* reedlands near the head waters. The Lake is fringed by *Baumea juncea*, *Juncus krausii* and *Melaleuca ericifolia* scrub. *Melaleuca quinquenervia*, *M. styphelioides* and *Casuarina glauca* occur around most of the lagoon, and thickets of *Melaleuca biconvera* extend up Cockrone Creek. The water is usually clear with *Ruppia* sp. and several species of green algae. ***Physical features*** (No data) ***Ecological features*** (No data) ***Significance*** The condition is very good. This is the best preserved of the coastal lagoons but there are some nutrient runoff and septic pollution. The foredune was affected by developments and was blowing into the mouth of the lagoon. Dune restoration is now beginning to take effect. ***Social and Cultural values*** The lake is an important tourist attraction and recreation area. It is also a feeding and nesting area for many species of water birds. Reference *Department of the Environment and Energy. 2017. Cockrone Lagoon - NSW182, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW182***
Coila Creek Delta	**Site description** (No data) **Physical features** The delta has formed at the mouth of Coila Creek that drains to Coila Lake, a large south coast ICOLL of about 700 ha. A variety of sediments form the delta including shell-filled sands on the points of the delta, soft sandy clays on the

Wetland	Key Features
	saltmarsh, black cracking clays in pans, and black fine soft muds in the lake adjoining the delta. **Ecological features** Mico-relief of a few decimetres gives rise to various habitats. Low areas are dominated by a Samphire (Sarcocornia quinqueflora), Wilsonia rotundifolia saltmarsh in good condition, higher areas by rushland of Sea Rush (Juncus krausii) and various saltmarsh forbs including Selliera radicans and Creeping Monkey-flower (Mimulus repens), and the longest accumulated sediments flanking Coila Creek dominated by a Swamp Oak (Casuarina glauca) forest. The dried black cracking claypans support no visible plant life. The strandline on the northern shore comprises various sedge species and a mix of unusual forbs. The aquatic habitats are rich in aquatic plants. Algae, Sea Grass (Zostera sp.), Sea Tassel (Ruppia sp.) and Sea Wrack (Halophila sp.) all occur with healthy populations of Halophila adjoining the saltmarsh. **Significance** (No data) **Social and Cultural values** Bait search area for fishers. Aboriginal significance is unknown but likely. Reference *Department of the Environment and Energy. 2017. Coila Creek Delta - NSW117, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW117*** .
Coomonderry Swamp	**Site description** (No data) **Physical features** Coomonderry Swamp was formed by natural infilling behind the sand barrier north of Mount Coolangatta. The wetland has soils composed of friable organic peat overlying acid peats of depths greater than one metre. Below the peat, various sandy subsoils overlie Quaternary marine sands. **Ecological features** The swamp is dominated by sedges and aquatic herbs. In particular the eastern margin of the swamp supports a most outstanding example of freshwater wetland - woodland - sand dune transition. At the swamp edge extensive reed beds and sedgelands merge into thickets of Swamp Oak (Casuarina glauca), Prickly Tea Tree (Leptospermum juniperinum), Swamp Paperbark (Melaleuca ericifolia) and Snow in summer (Melaleuca linariifolia). Adjacent to these shrub and small tree species there are extensive stands of Swamp Mahogany (Eucalyptus robusta) with an understorey of native grasses and sedges. Wet meadow communities on the western and southern margins are highly dynamic and support a diversity of short-lived wetlands species. Adjacent areas of Southern Mahogany (Eucalyptus botryoides), and Blackbutt (Eucalyptus pilularis) open forest as well as littoral rainforest also occur. Sedge and reed beds cover most of the swamp and are dominated by Jointed Twig-rush (Baumea articulata), Baumea arthrophylla, Tall Spike-rush (Eleocharis sphacelata), Common Reed (Phragmites australis) and Broad-leaf Cumbungi (Typha orientalis). Open water areas are dominated by submerged plant communities of Water Millfoil (Myriophyllum sp.), Nardoo (Marsilea sp.), and Blunt Pondweed (Potamogeton ochreatus. Significance Good example of coastal wetland on south coast, in relatively undisturbed condition. Coomonderry Swamp is the largest freshwater coastal wetland in the southern region of NSW. It is an outstanding example of a large freshwater swamp developed inland of a parallel Quaternary dune system. **Social and Cultural values** (No data) Reference *Department of the Environment and Energy. 2017. Coomonderry Swamp - NSW076, in Australian Wetlands Database. Department of the Environment and Energy,*

Wetland	Key Features
	*Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW076**.*
Cormorant Beach	***Site description*** Almost completely surrounded by houses with inadequate buffer. Subject to urban runoff. Degraded margin. ***Physical features*** (No data) ***Ecological features*** (No data) ***Significance*** A rare wetland type heavily impacted on the margins but retaining some very important unspoilt components. It contains rare freshwater communities, some uncommon species and important faunal habitat. All four plant communities that occur in the wetland are considered to be significant, with the dunal freshwater wetland providing frog and bird habitat within the urban area. While Paperbark Shrubland and Swamp Oak forest are structurally similar to estuarine counterparts, at this site they occur in deeper standing water and herbaceous understorey plants are different. ***Social and Cultural values*** Surrounded by urban development. Reference *Department of the Environment and Energy. 2017. Cormorant Beach - NSW172, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW172**.*
Crowdy Bay National Park	**Site description** (No data) **Physical features** The geology of Crowdy Bay National Park consists primarily of Quaternary sediments including sand, silt, mud, gravel, quartose sand and silt. An area of Tertiary rhyolite also occurs at Diamond Head which was formed as the result of an intrusion caused by volcanic activity along the east coast of Australia. Bedrock outcrops occur throughout the park and consist of Triassic shales, tuff, tuffaceous sandstone, sandstone and conglomerate. The soils of Crowdy Bay National Park consist predominantly of unconsolidated and podsolised poor nutrient sandy soils of Holocene and Pleistocene origin including siliceous sands, sand podzols and humus podzols, acid peats, solonchaks and brown podzolics. Bedrock soils include lithosols, red and yellow earths, gleyed podzolics, soloths and dark grey-brown clay loams. **Ecological features** Dunal wetland system, consisting of a mosaic of wet heath, sedgeland, dry heath, forested swamp and sclerophyll forest north of Harrington. Vegetation communities within the park include Tuckeroo (Cupaniopsis anacardioides) and Brush Box (Lophostemon confertus) littoral rainforests, Grey Mangrove (Avicennia marina) mangrove forests and woodlands, Flooded Gum (Eucalyptus grandis) and Blackbutt (Eucalyptus pilularis) wet sclerophyll forests, Tallowwood (Eucalyptus microcorys), Black Sheoak (Allocasuarina littoralis), and Banksia (Banksia aemula) dry sclerophyll forests and woodlands, graminoid clay heathland, wet heathland, Samphire (Sarcocornia quinqueflora), Sand Couch (Sporobolus virginicus) chenopod shrubland, Hairy Spinifex (Spinifex sericeus) tussock grassland, Kangaroo Grass (Themeda triandra) sod grassland, various sedgelands, Sea Rush (Juncus kraussii) rushland, Swamp Water Fern (Blechnum indicum) fernland, and saltmarsh communities. **Significance** Crowdy Bay National Park is a large complex of dunal wetlands which remain in a relatively natural condition and are thus considered to be a good example of this wetland type. **Social and Cultural values** Until the late nineteenth century the Ngamba and Birripai tribes of Aborigines occupied the area. In the summer the Birripai people lived in the

Wetland	Key Features
	lowlands of their territory near the river and the sea so that they could utilise the seasonally abundant fish and shellfish and native fruits. Aboriginal sites within the park include shell middens (approximately 6,000 years old), axe heads, stone tools and hooks. On the homeward leg of his 1818 expedition over the New England Tablelands into the Hastings Valley, John Oxley traversed the park area. Mineral sand mining occurred in various areas within the park between 1959 and 1982. Several residences within the park are the result of early European occupation of the area. Reference *Department of the Environment and Energy. 2017. Crowdy Bay National Park - NSW029, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW029**.*
Cudgen Nature Reserve	Site description (No data) Physical features Three major landforms dominate the Cudgen catchment including: Coastal sands located east of Cudgen Lake; Cudgen lagoonal lands (surrounding Cudgen Lake and including the south east of Round Mountain; and sediments of the Neranleigh-Fernvale Group which dominate the Round Mountain hills and upper catchment. Cudgen Lake is a barrier dune lake system. Sandy yellow podsols occur between the outer barrier dunes and Cudgen Lake. The Clothiers Creek and Reserve Creek floodplain soils are dark loams overlying clays. Ecological features Cudgen Nature Reserve supports 15 distinct vegetation associations, viz. littoral rainforest, lowland subtropical rainforest on Round Mountain, lowland subtropical rainforest on swamp forest margins, Swamp Paperbark (Melaleuca quinquenervia) swamp forest, Swamp Mahogany (Eucalyptus robusta) forest, Blackbutt (Eucalyptus pilularis) forest, Grey Gum (Eucalyptus propinqua) - Blackbutt (Eucalyptus pilularis) tall open forest, Red Gum (Eucalyptus tereticornis) - Pink Bloodwood (Corymbia intermedia) - Swamp Turpentine (Lophostemon suaveolens) forest, Scribbly Gum (Eucalyptus signata) - Wallum Banksia (Banksia aemula) forest, Wallum Banksia (Banksia aemula) heath, Wet heath, Baumea rubiginosa Closed Sedgeland, Water Ribbons (Triglochin procera) Sedgeland, Schoenoplectus litoralis Sedgeland, Grey Mangrove (Avicennia marina) Mangrove Wetland. Other vegetation communities of special significance include Swamp Banksia (Banksia robur) wet heathlands, Riberry (Syzygium luehmanni) - Broad-leaved Lilly Pilly (Acmena hemilampra) littoral rainforests and Swamp Banksia (Banksia robur) - Leptospermum liversidgei - Xanthorrhoea fulva wet heathland community. The perimeter of Cudgen Lake contains dense stands of Common Reed (Phragmites australis) and Lepironia articulata scattered with Cladium procerum. The shallow lake waters support a dense emergent growth of reeds Schoenoplectus litoralis and Cumbungi (Typha sp.) on the northern side of the lake. Other aquatic species include Baumea rubiginosa sedgeland and Triglochin procera, while intertidal and subtidal species are dominated by mangroves e.g. Grey Mangrove (Avicennia marina), Bruguiera gymnorrhiza and seagrasses e.g. Eel Grass (Zostera capricorni). Significance (No data) Social and Cultural values The Aboriginal people of the Cudgen area were known as the Coodjingburra. A number of Aboriginal sites have been identified in the local area including a stone quarry on the banks of Cudgen Lake. Reference Department of the Environment and Energy. 2017. Cudgen Nature Reserve - NSW108, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW108***

Wetland	Key Features
Cullendulla Creek and Embayment	**Site description** (No data) **Physical features** Most of the area is composed of widely spaced beach ridges overlying a shallow sheet of nearshore or low tidal shelly sands. The areas between the ridges have been infilled with mud and organic debris. **Ecological features** A mangrove forest comprising River Mangrove (Aegiceras corniculatum), and Grey Mangrove (Avicennia marina) covers most of the tidally influenced portion of the basin and the creek margins. Mudflats are bare apart from scattered depressions in which patches of seagrasses occur. A bare zone also separates the mangrove swamp from upland Eucalypt forest. This zone consists of a hard mud pavement with intermittent coverings of blue-green algae and occasional individuals of Beaded Glasswort (Sarcocornia quinqueflora). Swamp She Oak (Casuarina glauca) grows on the beach ridges. Fauna species include Black Swan (Cygnus atratus), Little Pied Cormorant (Phalacrocorax melanoleucos), Pygmy Right Whale (Caperea marginata) nearby. **Significance** The beach chenier system (a chenier is a long, low narrow beach ridge roughly parallel to a retreating shoreline seaward of marsh and mud-flat deposits) is uncommon in NSW. These well-developed cheniers provide a record of shoreline trends over the Holocene (10,000 BP to present). The embayment provides a good example of low energy deposition of beach ridge and mud flat deposits within an enclosed bay. **Social and Cultural values** The site is also an important sedimentological research site. The area was populated by the Yuin group of Aboriginal tribes who probably set up permanent camps near the river. Several middens have been recorded near the mouth of the estuary. The coastal areas provided plentiful food and were favoured by the Aboriginal people. Cullendulla Creek was particularly a source of fin fish and shellfish such as the Sydney Rock Oyster (Sccostrea commercialis) and Bimbilla (Anadara trapezia). The beach ridges in the chenier system contain extensive middens of Bimbilla. Present use of the area as a source of seafood by the Aboriginal community indicates a long tradition of use and economy of the Cullendulla area. Evidence of the early logging trade is apparent in an old loading wharf in the upper reaches of the Creek. Logs from Benandarah State Forest were off-loaded in upper reaches of creek to barge or creek waters. Reference *Department of the Environment and Energy. 2017. Cullendulla Creek and Embayment - NSW060, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW060*** .
Durras Lake - NSW118	**Site description** (No data) **Physical features** 80% lake foreshore densely forested, 20% low lying areas covered in sedge/ saltmarsh which is periodically inundated. Lake separated from ocean by sand barrier dunes. Freshwater inflow from forested catchment. Lake shallow with depth between 1-2 m. Broadwater slightly deeper. **Ecological features** Excellent habitat for prawns, crustaceans and fish. Extensive seagrass beds, (Zostera capricorni), Swamp Oak (Casuarina glauca) forest adjoining sedge areas including Sea Rush (Juncus krausii) and Bare Twig-rush (Baumea juncea) with Spotted Gum (Eucalyptus maculata) forest surrounding most of the lake. Wetland 215b is and extensive sedgeland of Bare Twig-rush (Baumea juncea). **Significance** Main significance is the intact catchment and natural state of the lake. **Social and Cultural values** Area has Aboriginal significance, was one of the first sightings of Aboriginal people by Captain Cook. Numerous Aboriginal sites surround

Wetland	Key Features
	the lake. Close to south Durras lake was used in early timber industry. The area is within the Benandarah National Estate Area, recognised for its multiple-use forests. Reference Department of the Environment and Energy. 2017. Durras Lake - NSW118, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW118***.
Eve St. Marsh, Arncliffe	**Site description** (No data) **Physical features** Eve Street Marsh is situated on a low-lying coastal floodplain, within a broad and shallow valley floor, between gently slopes and low ridges. Soils of the area consists of Quaternary alluvium, and unconsolidated sediments. **Ecological features This** wetland is a remnant of a once extensive brackish marsh extending eastwards from Arncliffe. The site has been rehabilitated from its previously degraded state. Changes include major earthworks to establish appropriate gradients for tidal inundation, a mangrove lined channel connecting the wetland with the Cooks River and an enlarged tidal pond area in which water level is controlled by a weir. The main area of wetland consists of islands covered with saltmarsh in an area of tidal mudflats fringed by Common Reed (Phragmites australis), Club Rush (Bolboschoenus caudwellii) and Marsh Club-rush (Bolboschoenus fluviatilis). The saltmarsh is relatively diverse ranging from Sea Rush (Juncus kraussii) and Seablite (Suaeda australis) at the higher elevations through Samphire (Sarcocornia quinqueflora) to Creeping Monkey-flower (Mimulus repens) at the lower level. **Significance** The wetland has significance as one of the first Australian examples of a rehabilitated tidal marsh that provides habitat for uncommon saltmarsh communities and for migratory wading birds and resident birds. Social and Cultural values Eve Street Marsh is an important resource area for education and study of natural sciences. Reference *Department of the Environment and Energy. 2017. Eve St. Marsh, Arncliffe - NSW077, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW077*** .
Five Islands Nature Reserve	**Site description** (No data) **Physical features** The Five Islands are rocky offshore islands consisting of Big Island, Rocky Islet and Martin Islet. The climate of the area surrounding Five Islands Nature Reserve is described as temperate marine. The geology of the area is predominantly dolerite of the upper Permian age. **Ecological features** The Five Islands are a significant area for seabird breeding, also offering shelter to many migratory birds. The islands support many shrub and grass communities. However, the dominant species presently found on the islands includes the exotic Kikuyu Grass (Pennisetum clandestinum). **Significance** (No data) **Social and Cultural values** The Five Islands Nature Reserve is a site of significance to the local Aboriginal people. The Five Islands were regularly visited by local people as a place for fishing, evidence of this being the many shell middens found around the edges of Big Island. Reference Department of the Environment and Energy. 2017. Five Islands Nature Reserve - NSW137, in Australian Wetlands Database. Department of the Environment and

Wetland	Key Features
	Energy, Canberra. Available from: http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW137.
Jervis Bay	**Site description** The Jervis Bay Territory and surrounding Jervis Bay Area contain diverse wetland areas including tidal, intertidal and estuarine wetlands, freshwater lagoons, swamp, saltmarsh, sedgeland, rocky marine shores and non-tidal freshwater forested wetlands. The area represents a site in the transition zone between warm temperate and the cool temperate biogeographic provinces and supports rich faunal and floral units. The estuarine inlet supports large areas of seagrass (900 ha) and smaller areas of mangrove (125 ha) and saltmarsh (230 ha). Important wetland sites in the Jervis Bay Territory include Lake Windermere, Lake McKenzie, Flat Rock Creek, Captains Lagoon, Bowen Island, Murrays Beach and Ryans Swamp. Wetland sites in the Jervis Bay Area are associated with six major creeks entering Jervis Bay but primarily include Currambene Creek, Moona Moona Creek, Wowly Gully and Carama Inlet. The wetland sites provide valuable habitat for waterfowl, indigenous fresh water fauna, and threatened and biogeographically important species. **Physical features** The geology of Jervis Bay includes three broad units; the two Snapper Point sandstone headlands which enclose the Bay, and the softer, generally low-lying Wandrawandrian siltstone comprising the catchment area to the west of the Bay. **Ecological features** The vegetation type is characterised by swamp communities (2.2%), wet heath (1.5%), mangroves (0.6%) and salt marsh (0.5%). The dominant mangrove species is River Mangrove (Avicennia marina) occurring with much smaller stands of Grey Mangrove (Aegiceras corniculatum). Saltmarsh found on cliff tops on Bowen Island is unusual. The marsh is dominated by the saltmarsh grass (Sporobolus virginicus) and soil moisture is maintained by sea spray. Estuarine areas are characterised by salt marsh and to a lesser extent, mangroves. **Significance** The site has highly diverse communities, with 723 species identified. Due to relatively large areas of seagrasses, mangrove, and saltmarsh, it is considered to be a good example of estuarine wetland on the south coast. The bay provides potential habitat for migratory waders. As with all estuarine wetlands, the bay provides important nursery habitats for commercial fish species. **Social and Cultural values** The uniqueness of the area and its waters provide a popular destination for tourists and recreationalists. The natural qualities of the area and relatively pristine condition give the area a high conservation value. The site contains evidence of Aboriginal history in the form of middens and camps, and shipwrecks located in the waters of the bay contribute to maritime history. Reference *Department of the Environment and Energy. 2017. Jervis Bay - NSW078, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW078**.*
Jervis Bay Sea Cliffs	**Site description** (No data) **Physical features** Among the tallest sea cliffs on the NSW coastline. Extend for about 14 km on the Beecroft Peninsula and 11 km on the Bherwerre Peninsula. Incised inlets such as Eves Ravine and Devils Inlet. Rocky offshore islets Drum and Drum Sticks. High sandstone cliffs, marine caves, overhangs, tunnels and crevices. **Ecological features** Significant plant and animal communities are expected. These include fernlands and herbfields on seepages, soaks and behind waterfalls. Interstitial invertebrate communities expected on geological formations and unusual animal communities adapted to high salt and humidity environments. Significant marine habitats at the base of the cliffs.

Wetland	Key Features
	Significance (No data) **Social and Cultural** values Of interest for heritage value; recreation; defence. Reference Department of the Environment and Energy. 2017. Jervis Bay Sea Cliffs - NSW139, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW139***.
Killalea Lagoon	**Site description** (No data) **Physical features** The geology of the Lagoon is comprised mainly of Quaternary sediments. **Ecological features** Plant species present include Austral Stonecrop (Crassula sieberiana), Blown Grass (Agrostis avenacea), Branching Rush (Juncus prismatocarpus), Caldwell's Club-rush (Bolboschoenus caldwellii), Coast Couch (Zoysia macrantha), Coastal Wattle (Acacia sophorae), Common Reed (Phragmites australis), Common Spike-rush (Eleocharis acuta), Couch Grass (Cynodon dactylon), Crassula (Crassula peduncularis), Creeping Monkey-flower (Mimulus repens), Duck Weed (Spirodela punctata), False Quilwort (Lilaeopsis polyantha), Flat Spurge (Chamaesyce psammogeton), Floating Club-rush (Isolepis fluitans), Goosefoot (Chenopodium glaucum), Guinea-flower (Hibbertia scandens), Inverted Sedge (Carex inversa), Jersy Cudweed (Pseudognaphalium luteoalbum), Kangaroo Grass (Themeda triandra), Knobby Club-rush (Isolepis nodosa), Lesser Joyweed (Alternanthera denticulata), Many-spiked Sedge (Cyperus polystachyos), Monier's Bacopa (Bacopa monniera), Nodding Club-rush (Isolepis cernuus), Ribbonweed (Vallisneria gigantea), River Buttercup (Ranunculus inundatus), River Club-rush (Schoenoplectus validus), Saltwater Couch (Paspalum distichum), Slender Knotweed (Persicaria decipiens), Spinifex (Spinifex sericeus), Streaked Arrowgrass (Triglochin striatum), Swamp Oak (Casuarina glauca), Tall Spike-rush (Eleocharis sphacelata), Velata Sedge (Fimbristylus velata), Water Primrose (Ludwigia peploides), and Water Ribbons (Triglochin procerum). Isolated clumps of Jointed Twig-rush (Baumea articulata) and Cumbungi (Typha orientalis) occur within the lagoon. Records exist of up to 300 Black Swans on the lagoon including many young cygnets. Other waterbird species present included Pied Cormorant (Phalacrocorax varius), Little Black Cormorant (Phalacrocorax sulcirostris), Pelicans and Black Duck (Anas superciliosa). **Significance** Considered to be a good example of a freshwater coastal lagoon. **Social and Cultural values** (No data) Reference *Department of the Environment and Energy. 2017. Killalea Lagoon - NSW079, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW079***
Kooragang Nature Reserve	**Site description** (No data) **Physical features** Kooragang Nature Reserve comprises two areas: Kooragang Island and Fullerton Cove. Kooragang Island originally consisted of several smaller islands or bars. Several attempts to control deposition and siltation of the Newcastle port area resulted in the agglomeration of these islands into a smaller number of larger units by the artificial filling of channels and the construction of training walls. Fullerton Cove is a large shallow embayment north of Kooragang Island. It has a maximum depth of two to three metres at its centre and at low tide large areas of mudflats are exposed. The lower Hunter River is a barrier estuary formed by the deposition of sediments in swamps and flats lying between the inner and outer coastal barrier sands. The sediments on Kooragang Island and adjacent estuarine areas comprise black silty and

Wetland	Key Features
	highly saturated soft clays to a depth of about 2 metres which are underlain by a light grey and silty sand. Depending on their elevation above sea level, drainage pattern and susceptibility to freshwater flooding, these sediments may be more or less saline. Salinities may vary from as high as 70% in evaporative salt marsh areas to as low as 8% behind levees where the soil is generally more fertile and regularly flooded by fresh water. Most soils of Kooragang Island are only slightly acidic, although small areas of sandy clays supporting brackish swamps can reach significantly low pH and create the potential for acid sulphates to occur, should they be permanently dried out or drained. **Ecological features** Extensive areas of mangrove (approximately 15 km^2), saltmarsh (approximately 5 km^2) and mudflats, occurring within the Hunter River estuary. Past filling has destroyed up to 10 km^2 of estuarine wetlands, but remaining wetlands remain in a healthy condition. Kooragang Nature Reserve contains numerous wetland types. The area is ecologically diverse and represents a significant genetic pool for wetland species in the region. Habitat types contained within Kooragang Nature Reserve include Mangrove forests dominated by Grey Mangrove with some River Mangrove; Saltmarsh dominated by Samphire Sarcocornia sp. and Saltwater Couch (the community of saltmarsh in the area to the west of Fullerton Cove was once the largest in the region). Saline and freshwater pastures are dominated by couch and other agricultural grasses, sedges and introduced weeds; Swamp forests consisting of Swamp Oak and Paperbarks. that are now limited (these forests once formed an intermediate stage in the succession of habitats from mangroves to forests in brackish water above the saline regime). Rainforest communities exist in remnants on Kooragang Island (isolated individual trees, for example figs Ficus spp. and Cabbage Tree Palms, still occur). A small area of seagrass Ruppia spiralis is located in a large tide pool adjacent to the railway line south of the Reserve; and Brackish swamps and standing open water containing sedges Scirpus spp. and other aquatic species. Other important habitats that exist include standing open water, mudflats, sandy beaches and rock training walls. The Nature Reserve is listed as a wetland of international importance under the Ramsar Convention because of its value as migratory wader habitat. **Significance** Considered to be a representative example of its type. **Social and Cultural values** Kooragang Nature Reserve and the surrounding areas have become known as one of the most important bird study areas in NSW. The Reserve is used for both research and recreational birdwatching. Limited recreational fishing is also undertaken within the Reserve. The Worimi and Awabakal Aboriginal tribes were the earliest inhabitants of the lower Hunter estuary. There are numerous middens and campsites scattered throughout the lower Hunter, but they occur particularly along the river banks and within the dunes along Stockton Bight. The nearest Aboriginal sites outside the reserve come from the dunes and coastal forests between Fullerton Cove and Stockton Bight where many and varied sites are known to occur. There are a few European historic sites within Kooragang Nature Reserve. These include concrete footings of an old dairy on Sandy Island, a timber bridge, a mature Moreton Bay Fig associated with early farming and a half-submerged timber drogher. The most significant structure on the island is the school teachers residence; however this lies outside the reserve. <u>Reference</u> Department of the Environment and Energy. 2017. Kooragang Nature Reserve - NSW080, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW080.

Wetland	Key Features
Lagoon Head	**Site description** A small undisturbed hind-dunal wetland and draining creek on crown land, SEPP No. 14 168. **Physical features** (No data) **Ecological features** (No data) **Significance** A rare wetland type with a diversity of communities and plants, some significant. This small wetland contains a high diversity of plant communities of which Freshwater Herbland, Spike-rush Sedgeland, Freshwater Baumea Sedgeland and Melaleuca-Baumea Shrubland are poorly represented along the NSW south coast. **Social and Cultural values** (No data) Reference *Department of the Environment and Energy. 2017. Lagoon Head - NSW173, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW173**.*
Lake Hiawatha and Minnie Water	**Site description** (No data) **Physical features** The geology of Lake Hiawatha and Minnie Water is primarily undifferentiated Palaeozoic greywacke, slate, sandstone, quartzite and chert with minor areas to the north and south of the lake consisting of Quaternary alluvium including alluvium, gravel, sand, silt and clay with dunes to the east of the lakes. The Palaeozoic geology supports soils such as red and yellow podzolics, and yellow and grey earths. **Ecological features** The sedge Lepironia articulata is the major emergent shoreline plant of both lakes. The bed of Minnie Water is covered by a dense mat of aquatic plants such as Musk Grass (Chara fibrosa) and Golden Bladderwort (Utricularia aurea). The Great Crested Grebe (Podiceps cristatus) and the Hoary-headed Grebe (Poliocephalus poliocephalus) occur on Lake Hiawatha and the Little Grassbird (Megalurus gramineus) if found in the reed beds at the water's edge. A variety of water beetles are common in both lakes. They are notable for their characteristic fauna such as the zooplankton including Calamoecia tasmanica, Mesocyclops leuckarti and Bosmina meridionalis. Twelve species of fish have been recorded within the lakes, the dominant ones being the Fire-tail Gudgeon (Hypseleutris galii) and the introduced Mosquito Fish (Gambusia holbrooki). **Significance** These wetlands are the largest dune contact lakes in this biogeographic region. Extensive research in the area suggested these sites were of regional significance with respect to freshwater invertebrates. **Social and Cultural values** Aboriginal sites within the park include pippie shell middens along the dune systems (possibly those near the lakes), mythological sites, campsites and stone tool workshops and quarries. The pippie shell middens are evidence of transitory day camps and together with campsites these demonstrate the marine-centred activity of the local Aborigines over the past 1,000 years. The lakes have significant value for scientific research for studying biological and physiochemical interactions. Reference Department of the Environment and Energy. 2017. Lake Hiawatha and Minnie Water - NSW031, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW031***.
Lake Illawarra	**Site description** (No data) **Physical features** Lake Illawarra is an early-intermediate barrier estuary with its entrance to the ocean being a weakly active fluvial delta system. The entrance

Wetland	Key Features
	channel is constantly changing by shifting aeolian sands and a high energy beachfront. **Ecological features** The shallow waters and saline conditions allow seagrasses such as Zostera sp. and Ruppia sp. to thrive. These seagrasses provide food for waterfowl. A total of 24 species of waterbirds was recorded on Lake Illawarra, including 97 Grey Teal (Anas gibberifrons), 74 Chestnut Teal (Anas castanea), 42 Black Swan (Cygnus atratus), and 40 Australasian Little Grebe (Podiceps novaehollandiae). Estuarine vegetation of Lake Illawarra was mapped and included saltmarsh communities and extensive seagrass beds. Four major structural units or complexes and 15 communities for the foreshore vegetation of Lake Illawarra, with a total of 126 species recorded. The peripheral and foreshore vegetation includes the saltmarsh of Samphire (Sarcocornia quinqueflora), Shore Rush (Juncus kraussii), Common Reed (Phragmites australis), Swamp Oak (Casuarina glauca), and Creeping Saltbush (Atriplex australasica). **Significance** (No data) Social and Cultural values Aboriginal sites of archaeological significance occur near the lake including a burial ground, quarry and open midden. Reference *Department of the Environment and Energy. 2017. Lake Illawarra - NSW081, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW081***
Lake Termeil Wetland Complex	***Site description*** Termeil Lake is a large relatively undisturbed coastal lagoon with a catchment area of about 1400 ha. ***Physical features*** (No data) ***Ecological features*** (No data) ***Significance*** The complex of wetlands at Lake Termeil makes this area significant and has been described as near pristine. The wetland supports a number of regionally rare plant species and uncommon wetland vegetation communities. The wetland is a rare example of freshwater vegetation communities. In addition the wetland supports a range of water birds and two threatened bat species and has been protected from anthropogenic disturbance. ***Social and Cultural values*** Does not appear to have a high level of recreational use. A number of aboriginal sites have been recorded around the lake. Reference *Department of the Environment and Energy. 2017. Lake Termeil Wetland Complex - NSW174, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW174***
Limeburners Creek Nature Reserve	**Site description (**No data) **Physical features** The geology of Limeburners Creek Nature Reserve is varied i.e. the headlands consist of Carboniferous sediments including sandstone, siltstone, tuff, shale and limestone and the western areas of the reserve consist of Quaternary sand dunes. Soils are sandy and are derived from clays, sands, silt mud and gravel. Ecological features Dunal wetland system, consisting of a mosaic of wet heath, sedgeland, dry heath, forested swamp and sclerophyll forest. The majority of the reserve contains Broad-leaved Tea Tree (Melaleuca quinquenervia) and Swamp Oak (Casuarina glauca) swamp sclerophyll forest and woodland, Heath Banksia (Banksia ericifolia) swamp shrubland, Grass Tree (Xanthorrhoea fulva), Tea Tree (Leptospermum sp.) and Banksia (Banksia oblongifolia) wet heath and sedgelands.

Wetland	Key Features
	Small pockets of littoral rainforest, mangroves, dune heathlands, and saltmarsh communities are also represented within the nature reserve. **Significance** Limeburners Creek Nature Reserve is a large complex of dunal wetlands remaining in a relatively natural condition and is therefore considered to be a good example of coastal dunal wetlands. **Social and Cultural values** Aboriginal occupation of the area dates back to 5-6,000 years. A particularly high concentration of Aboriginal sites have been recorded within the Nature Reserve including burial sites, shell middens, campsites, axe-grinding grooves, and stone quarries. One of the three Aboriginal fish traps recorded along the north coast of NSW is located within the Nature Reserve. There is also evidence of European settlement in the area, for example, there is evidence of the gathering of shells which were burnt to produce lime for the penal colony at Port Macquarie. The Nature Reserve provides opportunities for scientific research of coastal processes, wetland systems and vegetation succession. Reference *Department of the Environment and Energy. 2017. Limeburners Creek Nature Reserve - NSW032, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW032*** .
Merimbula Lake	**Site description** (No data) **Physical features** The geology of Merrimbula Lake consists of Tertiary sediments including gravel, sand, sandstone, clay and lignite on the southern shores and Upper Devonian sediments of the Merrimbula Formation including conglomerate, red and brown shale, sandstone, quartzite, and arkose. **Ecological features** Supports relatively large area of seagrasses (2300 ha) and smaller areas of mangrove (40 ha) and saltmarsh (60 ha. Flora species which occur in the area include Dune Thistle (Actites megalocarpa), Knobby Club-rush (Isolepis nodosa), Rush Lepidosperma gladiatum, Coastal Bearded Heath (Leucopogon parviflorus), Coastal Wattle (Acacia sophorae), Spiny-headed Mat-rush (Lomandra longifolia), Wood Sorrel (Oxalis chnoodes), Beach Fescue (Austrofestuca littoralis), Hairy Spinifex (Spinifex sericeus), Prickly Couch (Zoysia macrantha), and the herb Acaena novae-zelandiae. Fauna species include the Hawksbill Turtle (Eretmochelys imbricata), Leopard Seal (Hydrurga leptonyx), Dugong (Dugong dugon), Little Penguin (Eudyptula minor), Little Pied Cormorant (Phalacrocorax melanoleucos), Little Black Cormorant (Phalacrocorax sulcirostris), Australian Pelican (Pelecanus conspicillatus), and Australian White Ibis (Threskiornis molucca). **Significance** (No data) **Social and Cultural values** Two large Aboriginal shell middens have been located at the site. Reference Department of the Environment and Energy. 2017. Merimbula Lake - NSW061, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW061***.
Meroo Lake Wetland Complex	**Site description** Meroo Lake is an extensive coastal lagoon with a catchment area of approximately 1950 ha. It comprises one large and one small estuarine wetland that are linked to the lake. **Physical features** (No data) **Ecological features** (No data) **Significance** Saltwater sedgeland is probably the largest stand of the river clubrush near its southern limit. This very large wetland contains some mosaic communities

Wetland	Key Features
	with mixes of dominant species not often seen elsewhere. In a study of the fauna of the wetlands of the lower Shoalhaven City, Lake Meroo stood out in terms of the diversity and abundance of mammals and frogs. The Lake supports the only population of Nationally Endangered Green and Golden Bell Frog found in the coastal lakes, and it is considered to be the third largest population in the Shoalhaven Region. The lake also provides habitat for three other threatened animal species. Social and Cultural values Does not appear to have a high level of recreational use. A number of aboriginal sites have been recorded around the lake. **Reference** *Department of the Environment and Energy. 2017. Meroo Lake Wetland Complex - NSW175, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW175***
Minnamurra River Estuary - NSW084	**Site description** (No data) **Physical features** (No data) **Ecological features** The riverine vegetation is dominated by thick stands of Grey Mangrove (Avicennia marina) and River Mangrove (Aegiceras corniculatum) with areas of saltmarsh, Casuarina forest and rushes in brackish areas subject to flooding or tidal movements. Rocklow Creek (SEPP 14 wetland 374) supports mangrove forest along the immediate banks of the creek. Adjacent to the creek is a brackish wetland dominated by Salt Rush (Juncus kraussii) and Samphire (Sarcocornia quinqueflora). Swamp She-oak (Casuarina glauca) and Common Reed (Phragmites australis) are found around the margins of the wetland. SEPP 14 wetland 373 consists of a crown reserve on the southern side of the river downstream of the road bridge. The reserve consists of mangrove and saltmarsh communities with considerable amounts of regenerating mangroves present. Saltmarsh species present include Samphire (Sarcocornia quinqueflora), Salt Couch (Sporobolus virginicus) and pigface. The mangroves appear to be regenerating after disturbance. SEPP 14 wetland 372 is at the upper reaches of the estuary and consists of a mixture of Swamp She-oak forest and saltmarsh which occurs on the floodplain of the river. This floodplain area is crossed by a number of saline-brackish creeks which support thin fringes of mangroves along their banks. Species present in the Swamp She-oak forest community include Swamp She-oak (Casuarina glauca), Northern Boobialla (Myoporum acuminatum), Salt Rush (Juncus kraussii), Club Rush (Isolepis nodosa), Seablite (Suaeda australis), Salt Couch (Sporobolus virginicus), and Samphire (Sarcocornia quinqueflora). In the saltmarsh areas records exist of Salt Rush (Juncus kraussii), Streaked Arrowgrass (Triglochin striata), Creeping Brookweed (Samolus repens), Salt Couch (Sporobolus virginicus), Samphire (Sarcocornia quinqueflora), and Seablite (Suaeda australis). SEPP 14 coastal wetland 372 is located on private property which is subject to grazing. A new residential development has been constructed around the south-eastern side of the wetland. **Significance** (No data) **Social and Cultural values** The Minnamurra Estuary is also an important area for commercial oyster farming. Reference Department of the Environment and Energy. 2017. Minnamurra River Estuary - NSW084, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW084***.
Moruya River Estuary Saltmarshes	**Site description** (No data)

Wetland	Key Features
	Physical features The saltmarsh is part of a mature estuarine system with a relatively extensive floodplain. The marsh is geographically defined by SEPP 14 coastal wetlands No. 177 and 178 and possibly SEPP 14 coastal wetlands in Malabar Lagoon. Ecological features A large Samphire (Sarcocornia quinqueflora) dominated herbfield, sparse Mangrove shrubland lining the channel banks, Juncus rushlands and Swamp Oak (Casuarina glauca) forest on the landward side of the marsh occurs at SEPP 14 coastal wetland No. 177. **Significance** Moruya River estuary contains a number of extensive, modified salt and brackish marshes. All are of conservation significance and due to their variability, of considerable floristic interest. **Social and Cultural values** Grazing area. Reference *Department of the Environment and Energy. 2017. Moruya River Estuary Saltmarshes - NSW119, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW119**.*
Myall Lakes	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
Nadgee Lake and tributary wetlands	**Site description** (No data) **Physical features** Nadgee Lake is an intermittently open/closed coastal lake. It has never been mechanically opened. It has a relatively large catchment of 15.5 km^2 and a surface water area of about 1 km^2. It has a broad unvegetated sand berm at the normal breakout entrance. The depth of the lake is unknown but likely to be less than 5 m. **Ecological features** The area is habitat for a range of wildlife including threatened species. The lake supports interesting waterbird assemblages including Musk Duck and Black Swan and may be an important drought refuge for waterbirds. Emergent rushes protect the western foreshore and merge into the adjoining swamp communities. Estuarine aquatic vegetation includes sea grass beds of Ruppia sp. Up to 1,000 Black Swans gather at Nadgee Lake between September and January to moult. During this time the birds are flightless and dependent on the lake to supply all their needs including food and shelter until the moult is finished. During winter as few as two swans have been recorded. **Significance** (No data) **Social and Cultural values** It is the only coastal lagoon of its type within a wilderness area in NSW and is the most undisturbed coastal lake in NSW. There is evidence of Aboriginal occupation of the area. Due to its pristine nature, the lake is an excellent reference site for scientific research regarding coastal lagoon ecology. Reference *Department of the Environment and Energy. 2017. Nadgee Lake and tributary wetlands - NSW187, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW187** .*
Nargal Lake	**Site description** (No data) **Physical features** Nargal Lake is one of few dune-swale freshwater lakes in the bioregion the other main one being Bondi Lake. The total catchment is about 60 ha. A relatively narrow frontal dune about 50 m basal width and about 10 m total height separates the lake from the ocean. This is much narrower and lower than the Bondi Lake foredune.

Wetland	Key Features
	Ecological features The eastern shoreline and fringe contain small areas of Swamp Oak (Casuarina glauca) forest. Sedgelands of Spike-rush (Eleocharis sp.) occur in the south-western and northern sectors of the lake providing shelter for waterbirds and waterfowl, e.g. Musk Duck (Biziura lobata), and breeding grounds for Black Swan (Cygnus atratus). Possible drought refuge for waterfowl. A strandline herbfield of Selliera radicans and other species occurs on the eastern shoreline. **Significance** (No data) **Social and Cultural values** Of significance to Aboriginal people Reference Department of the Environment and Energy. 2017. Nargal Lake - NSW120, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW120***
Nelson Lagoon	**Site description** (No data) Physical features Intermittently closed and open barrier lagoon with several small, indented bays and with 20 km^2 catchment. Aerial photo interpretation suggest that this lagoon has undergone a high degree of in-filling. A delta has formed at mouth of Nelson Creek. **Ecological features** Areas of saltmarsh of conservation significance. **Significance (**No data) **Social and Cultural values** Natural recreation, swimming and fishing Reference *Department of the Environment and Energy. 2017. Nelson Lagoon - NSW121, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW121****.*
Pambula Estuarine Wetlands	**Site description** (No data) **Physical features** Estuarine system with a backwater extending as a closed tributary to the Yowaka River. They are located upstream of Pambula Lake at the fluvo-estuarine interface on the southern edge of the Pambula River floodplain. The wetlands are located across a number of different land tenures including freehold, reserved and unreserved crown lands, and a small flora and fauna reserve. **Ecological features** The area is habitat for a number of fauna including threatened species. Areas of exposed sandflats and Mangroves (Avicennia marina), saltmarsh and brackish/freshwater assemblages. **Significance** (No data) **Social and Cultural values** The area is a landmark to the local community. It is a developing icon for the community with strong recognition developing for its environmental and historical values. The community and Bega Valley shire council are working together to define a balance for the area between protection and potential recreational use. The area has significant historical values linked to use of part of the area as a race course. Reference Department of the Environment and Energy. 2017. Pambula Estuarine Wetlands - NSW122, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW122***
Port Stephens Estuary	**Site description** (No data) **Physical features** The geology of the Port Stephens estuary comprises primarily of Quaternary alluvium (gravel, sand, silt, clay, 'Waterloo Rock', marine and freshwater

Wetland	Key Features
	deposits) and Carboniferous Nerong Volcanics (Toscanite, dacite, andesite, ignimbrite, agglomerate, conglomerate, sandstone and siltstone). Smaller areas on the west of the estuary are comprised of Carboniferous undifferentiated volcanics and Permian sediments of the Dalwood Group (sandstone, siltstone, mudstone, shale, conglomerate, tuff, and basalt). The soils of the area are generally acidic. The soils of the beach fore dune are leached, well drained and sandy whereas the soils of the hind dunes are grey, well drained with a humic zone. Poorly drained peat and silty soils over sand occur in the swamp heaths and forests. The soils of the tidal zone comprise of silts and muds compacted with shell fragments. **Ecological features** Extensive estuarine system consisting of an area of 2,776 ha of mangroves, 1000 ha of seagrass, and 1433 ha of saltmarshes. This comprises approximately 21% of mangrove forests, 13% of saltmarsh, and 5% of seagrasses in NSW. Other aquatic plant communities present within the estuary include Seawracks Halophila spp. The flora of the beach fore dunes consists of species such as Many-flowered Mat-rush Lomandra multiflora, Prickly Couch Zoysia macrantha, Bearded Heath Leucopogon lanceolatus, Guinea Flower Hibbertia scandens, Coast Tea Tree Leptospermum laevigatum, Paperbark Melaleuca armillaris, Coast Banksia Banksia integrifolia, Old Man Banksia Banksia serrata, and Black Sheoak Allocasuarina littoralis. In the hind dunes dense vegetation includes Smooth-barked Apple Angophora costata, Old Man Banksia Banksia serrata, Monotoca elliptica and Blackbutt Eucalyptus pilularis with an understorey of Blady Grass Imperata cylindrica, Bracken Fern Pteridium esculentum and Wattle Acacia sp. The vegetation of the inner barrier dunes support scrubland vegetation including Old Man Banksia Banksia serrata, Tea Trees Leptospermum trinervium, L. polygalifolium, Rice Flower Pimelia linifolia, Grass Tree Xanthorrhoea australis, Prickly Moses Acacia ulicifolia, Sydney Golden Wattle Acacia longifolia, Broad-leaved Scribbly Gum Eucalyptus haemastoma, and Parramatta Red Gum Eucalyptus parramattensis. Swamp heath and swamp forest occurs near Salamander Bay and includes dominant species such as Banksias Banksia robur, B. oblongifolia, Hakea Hakea teretifolia, Paperbarks Melaleuca nodosa, M. quinquenervia, Swamp Mahogany Eucalyptus robusta, Broad-leaved Scribbly Gum Eucalyptus haemastoma, Native Broom Viminaria juncea, Prickly-leaved Tea Tree Melaleuca styphelioides, and Christmas Bells Blandfordia grandiflora. Mangrove species growing in the tidal zone are the River Mangrove Aegiceras corniculatum, Grey Mangrove Avicennia marina. Other species growing in this zone include Swamp Oak Casuarina glauca, Sea Rush Juncus krausii, Tuckeroo Cupaniopsis anacardioides, Brush Muttonwood Rapanea howittiana, Creeping Brookwood Samolus repens, Samphire Sarcocornia quinqueflora, the herb Sueada australis, Ruby Saltbush Enchylaena tomentosa, Isolepis nodosa, and Prickly Couch Zoysia macrantha. Freshwater swamps occur between the outer barrier dunes and terrestrial dunes and includes species such as Water Ribbons Triglochin procerum, Tall Spike-rush Eleocharis sphacelata, Tea Tree Leptospermum liversidgei, Christmas Bells Blandfordia grandiflora, Vanilla Plant Sowerbaea juncea, Milkmaids Burchardia umbellata, and Selaginella uliginosa. Mammal species which have been recorded within the area include the Yellow-footed Antechinus (*Antechinus flavipes*), Brown Antechinus (*Antechinus stuartii*), New Holland Mouse Pseudomys novaehollandiae, Common Brushtail Possum Trichosurus vulpecula, Lesser Long-eared Bat Nyctophilus geoffroyi, Gould's Long-eared Bat Nyctophilus gouldi, and the Northern Brown Bandicoot Isoodon macrourus. Other species recorded within the area include the Eastern Banjo Frog Limnodynastes dumerilii. **Significance** The Port Stephens Estuary is considered to be a good example of estuarine wetland due to large areas of mangroves and saltmarsh in a healthy condition.

Wetland	Key Features
	Social and Cultural values The Port Stephens area was traditionally occupied by the Worimi people. Evidence of Aboriginal occupation of the area is not well documented; however, some middens and stone artefacts have been recorded within Tomaree National Park. James Cook named Port Stephens after he sailed past in 1770. In 1791, the Salamander was the first ship to enter the harbour while carrying out an informal investigation. Governor Macquarie arrived in Port Stephens in the Lady Nelson in 1811. John Oxley arrived in 1818 on returning from his trek seeking the source of the Macquarie River. Prior to permanent European settlement of the area, groups of Chinese fishermen were reputed to have lived along the shores of Port Macquarie. Reference *Department of the Environment and Energy. 2017. Port Stephens Estuary - NSW034, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW034**.*
Shoalhaven / Crookhaven Estuary	**Site description** (No data) **Physical features** Geographical area of listing includes Comerong Island, an extensive sand island in the Shoalhaven River estuary. The eastern side of Comerong Island consists of a marine sand barrier on which parallel dunes have formed. The northern part of this sand barrier is a sandspit across the Shoalhaven River entrance and is subject to flooding. The remainder of Comerong Island and the other islands within the estuary have built up on river silt behind the sand barrier. The islands are joined by mudflats at low tide. Additional habitats of sandspits (at Shoalhaven Heads) and sediments of various assortments occur as a result of riverine and marine deposition. **Ecological features** Supports relatively large area of mangrove (350 ha) and saltmarsh (150 ha), with smaller area of seagrasses (100 ha) and small patches of swamp oak forest. Common species include River Mangrove (Avicennia marina), Sea Rush (Juncus kraussii), Bracken Fern (Pteridium esculentum), Juncus polyanthemus, Common Reed (Phragmites australis), Swamp Oak (Casuarina glauca), Samphire (Sarcocornia quinqueflora), Sporobolus virginicus, Seablite (Suaeda australis), Goosefoot (Chenopodium glaucum), and New Zealand Spinach (Tetragonia tetragonioides). An area of littoral rainforest occurs on the south western side of the dunes on Comerong Island. Common species include Corkwood (Guioa semiglauca), Red Olive Plum (Cassine australis), Brown Beech (Cryptocarya glaucescens), Cabbage Tree Palm (Livistona australis), and Turnip Wood (Rapanea howittiana). **Significance** Due to relatively large areas of mangrove, saltmarsh and seagrasses, considered to be representative example of estuarine wetland on the south coast. **Social and Cultural values** One Aboriginal midden of significance has been recorded within the estuary and several other sites within the area are of significance to the Aboriginal community such as other open middens and axe grinding grooves. Also of scientific importance in the areas of wader conservation and research. Reference Department of the Environment and Energy. 2017. Shoalhaven / Crookhaven Estuary - NSW088, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW088.
Solitary Islands Marine Park	**Site description** (No data) **Physical features** The Marine Park lies in the region where the warm tropical waters of the East Australian Current meet cool coastal waters of temperate origin creating a biogeographic overlap zone of unusually high diversity. The Solitary Islands are

Wetland	Key Features
	remnants of a north-south outcrop of marine rocks of Carboniferous age. The inner shelf, beaches and dunes consist of silica sands. Ecological features Habitats include open waters, continental shelf floor, coral reefs, rocky reefs and headlands, sandy beaches, estuaries, tidal mud flats, seagrass, mangroves, saltmarsh, low scrub lands, grass leans, shallow soils and bare rock. **Significance** (No data) **Social and Cultural values** The marine park is a focus for tourism activities, particularly whale watching, boating, snorkelling, scuba diving and recreational fishing. It is also of key importance to education and scientific research in a variety of universities and museums and The University Of Armidale operates a research station at Arrawarra Headland. Reference *Department of the Environment and Energy. 2017. Solitary Islands Marine Park - NSW109, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW109**.*
St. Georges Basin	**Site description (**No data) **Physical features** The geology of the northern shores of the St Georges Basin consists primarily of Permian sediments of the Wandrawandian Siltstone which includes siltstone, and silty sandstone. The eastern and western shores consist of Permian sediments of the Conjola formation including conglomerate, sandstone and silty sandstone, while the southern shore consists primarily of Quaternary sediments including alluvium gravel, swamp deposits and sand dunes. **Ecological features** Supports relatively large area of seagrasses (850 ha) and smaller areas of mangrove (25 ha) and saltmarsh (4 ha). Swamp Oak (Casuarina glauca) woodland fringes much of the basin with smaller areas of Swamp Paperbark (Melaleuca ericifolia) shrubland and Common Reed (Phragmites australis) reedland. The catchments on the southern and western sides of the basin are covered largely in native vegetation. **Significance** (No data) **Social and Cultural values** (No data) Reference Department of the Environment and Energy. 2017. St. Georges Basin - NSW090, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW090***.
Swan Lagoon	**Site description** (No data) **Physical features** The lagoon is characteristic of many south coastal lagoons separated from the sea by beach dunes. Ecological features A small lagoon with reed swamp catchment. The lagoon itself is surrounded by Grey Swamp She-oak (Casuarina glauca) which is considered to be 20 plus year old regeneration. Early reports from the area indicate a more open woodland probably of forest red gum (Eucalyptus tereticornis). Juncus sp. and Common Reed (Phragmites australis) fringe the water edge. **Significance** (No data) **Social and Cultural values** The significance is cultural both traditional and contemporary. The lagoon (in part) lies within the Murramarang Aboriginal Area and forms part of a complex of sites within a culturally significant landscape. The area is one of only three archaeological sites of Pleistocene age on the south coast. The area has high Aboriginal significance. Part of significance relates to the lagoon being home to the mythological serpent, a creature common in Aboriginal culture. The mythology

Wetland	Key Features
	of the lagoon makes connections as far as the far south coast and the Snowy mountains. The lagoon and swamp provide a range from freshwater to brackish conditions, with associated vegetation. This wetland complex would have provided several alternative sources of animal and plant food for Aboriginal people who were also exploiting marine resources around Murramarang Point. The area including the lagoon continues to be of significance for contemporary Aboriginal people of the south coast who regard the area as being indicative of their culture, signifying intertribal relationships through its use as a meeting place. Reference *Department of the Environment and Energy. 2017. Swan Lagoon - NSW140, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW140**.*
Swan Pool / Belmore Swamp	**Site description** (No data) **Physical features** The geology of the area consists of Quaternary sediments including sand, silt, mud and gravel. **Ecological features** Very extensive fresh meadows, seasonal fresh swamps, and reed swamps, characterised by a zonation from fresh meadow to seasonal fresh swamp and reed swamp with increasing depth and permanence of inundation. Common species include Marsh Clubrush (Bolboschoenus fluviatilis), Common Reed (Phragmites australis), Spike-rushes (Eleocharis equisetina and Eleocharis dietrichiana), Water Couch (Paspalum distichum), and Water Pepper (Persicaria hydropiper). Swamp forests of Broad-leaved Paperbark (Melaleuca quinquenervia), Snow-in-summer (Melaleuca linariifolia) and Swamp Oak (Casuarina glauca) fringe the wetlands. **Significance** A good example of a large area of coastal floodplain swamp. **Social and Cultural values** The Macleay coastal area is part of the area of the Thunghutti (Dhunghutti) group of Aboriginal people. Aboriginal sites recorded within the local area include bora rings, shell middens, campsites, and burial sites. Sites specifically recorded within Belmore Swamp include shell middens and burial grounds. Cedar cutters were the first Europeans to explore the rainforests of the north coast rivers during the 1820s. Farmers cleared the rainforests of the alluvial plains for agriculture and Kempsy was then established in 1836. Reference Department of the Environment and Energy. 2017. Swan Pool / Belmore Swamp - NSW035, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW035***.
Tabourie Lake	***Site description*** Extensive estuarine lake comprising 5 SEPP 14 wetlands. ***Physical features*** (No data) ***Ecological features*** (No data) ***Significance*** Saltmarsh is a community type declining in area in NSW, which may provide important nursery habitat for fish. Nearly all of the region's saltmarsh occurs in two small bays at Lake Tabourie, and in Tabourie Creek. It supports a number of rare plant species and two threatened animal species. ***Social and Cultural values*** A number of aboriginal sites have been recorded around the lake; recreational use. Reference *Department of the Environment and Energy. 2017. Tabourie Lake - NSW171, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-***

Wetland	Key Features
	bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW171 *. Accessed 25 Jul 2017.*
Terrigal Lagoon	***Site description*** A shallow, brackish lagoon with *Phragmites australis* reedlands at the extremities of the western arm. A wide border of *Juncus kraussii* is found there on the landward edge and *Casuarina glauca* is spreading into the reedlands. Spoonbills and Black ducks were observed on this arm of the lagoon. The northern arm has been significantly altered by development on the shores and filling of the wetlands. The bottom is very silty, and the water becomes very turbid when mixed by wind waves. There are no obvious algal areas or seagrasses. ***Physical features*** (No data) ***Ecological features*** (No data) ***Significance*** Condition is poor. Septic pollution is being reduced as the sewer is connected but urban run-off, fertilisers and the like, continue to add nutrients. Landfill, erosion in the catchment and frequent opening, all result in accelerated sedimentation. Some of the wetlands are recommended for conservation in SEPP No. 14 numbers 908 and 910. ***Social and Cultural values*** The lagoon is an important tourist attraction and recreation area. Water birds and animals still use the western arm of the lagoon where the shore vegetation is less disturbed. Reference *Department of the Environment and Energy. 2017. Terrigal Lagoon - NSW180, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW180****.*
Towra Point Estuarine Wetlands	**Site description** (No data) **Physical features** Towra Point is located on the northern side of Kurnell Peninsula which forms the southern shore of Botany Bay. It is an estuarine complex bounded by Woolooware, Quibray and Weeney Bays. Towra Point and Taren Point are low lying promontorys of Holocene sandy sediments. The muddy sand flats at the eastern end of Towra Point and at the western end of Towra Spit are being damaged by coastal erosion. Towra Spit is actively extending in a southwesterly direction and the beaches on the eastern and western faces of Towra Point are eroding and contributing sand to the growth of the spit. Recent erosion has been partly attributed to dredging and port works within Botany Bay. In 1991, erosion caused the western portion of Towra Spit to separate from the mainland and to form a highly mobile island west of the spit. However, during 1997 the island rejoined the mainland at the eastern end after a large local storm. **Ecological features** The terrestrial parts of the land are fringed by extensive tidal wetlands, including approximately 600 ha of seagrasses including Strapweed (Posidonia australis), Eelgrass (Zostera capricorni), and the Paddleweeds Halophila ovalis and Halophila decipiens; 400 ha of mangroves including the Grey Mangrove (Avicennia marina) and River Mangrove (Aegiceras corniculatum); and 161 ha of saltmarshes, representing one of the few large remnant systems near Sydney. Towra Point is an important bird feeding, roosting and nesting site for migratory waders and waterfowl. Towra Point Nature Reserve is listed under the Ramsar Convention because of its value as migratory wader habitat. The terrestrial plant communities comprise a number of recognised associations such as Swamp She-oak (Casuarina glauca) forest, littoral rainforest, littoral strandline and a complex mosaic of dune sclerophyll scrub/forest. **Significance** Large areas of mangroves and saltmarsh in a healthy condition provide a representative example of estuarine wetlands. The site contains 50% of mangrove

Wetland	Key Features
	communities remaining in the Sydney region. It is an important habitat for many species of migratory waders and is considered an important area for wading birds in NSW and is especially significant for wading and wetland birds in the Sydney region. As with other areas of estuarine wetlands, also an important habitat for many commercial fish species. Because of the presence of migratory waders, the area is often used for wader research, including banding. Located close to Kurnell Field Studies Centre and is used for environmental education. **Social and Cultural values** Because of the presence of migratory waders, the area is often used for wader research, including banding. Located close to Kurnell Field Studies Centre and is used for environmental education. The Towra Point area offers a readily accessible variety of wetland plants and animals in close proximity to Sydney for research and teaching. The Reserve has some historic structures and three known Aboriginal sites. The shorebird community occurring on the relict tidal delta sands at Taren Point has been listed as an endangered ecological community under the NSW Threatened Species Conservation Act, 1996. Reference Department of the Environment and Energy. 2017. Towra Point Estuarine Wetlands - NSW092, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW092**.
Tuggerah Lake	**Site description** (No data) **Physical features** (No data) **Ecological features** Three main features of the wetlands are Teatree Swamps dominated by Broad-leafed Paperbarks Melaleuca quinquenervia; Casuarina swamps containing major forests of Swamp Oak Casuarina glauca; and Shallow Estuarine Waters, the main aquatic vegetation being the seagrasses Zostera capricorni, Halophila ovalis and Sea Wrack Ruppia megacarpa. The areas of saltmarsh surround the lake. Saltmarsh of Rushes Juncus sp., Samphire Sarcocornia quinqueflora and Saltwater Couch Paspalum vaginatum occur around the lakes in addition to the fringing paperbarks and swamp oaks. Seagrass beds are very extensive and drop their leaves twice a year so that large areas of wrack occur around the lake. At times extensive beds of algaes occur which die and mix with the wrack of the seaweed. **Significance** (No data) **Social and Cultural values** About 50,000 people live around Tuggerah Lakes in the suburbs of The Entrance, Long Jetty, Killarney Vale, Berkeley Vale, Chittaway, North and South Tacoma, Wyongah, Gorokan, Toukley and Norahville. Fourteen professional fishermen operate all year round; the area is important for recreational fishing, sailing and water skiing and The Entrance is a major holiday resort, c.25 caravan parks front onto the lake. Coal mining will shortly take place under the lake. Reference Department of the Environment and Energy. 2017. Tuggerah Lake - NSW141, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW141*** .
Tuross River Estuary	**Site description** (No data) **Physical features** A complex delta estuary at intermediate stage of infilling with many low islands and islets (>20), draining a major SEC bioregion river system and enters the sea adjoining a relatively long beach barrier. **Ecological features** A diverse area of land and waters with high shoreline length due to the delta system. Islands contain a variety of plant and animal communities

Wetland	Key Features
	including mangroves, saltmarsh, Casuarina swamp forest, mapped littoral rainforest (SEPP 26), sand and mud flats. **Significance** (No data) **Social and Cultural values** Oyster farming, recreational boating and fishing, productive (cattle, dairy) grazing land on & adjoining delta. Aboriginal middens and sites of Aboriginal sacred significance are known in the area. Reference Department of the Environment and Energy. 2017. Tuross River Estuary - NSW123, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW123**.
Twofold Bay	**Site description** (No data) **Physical features** The area of the Bay shoreline and seabed up to 6 m depth. Includes the rocky and sandy shorelines of Twofold Bay, the Towamba River and Nullica River estuaries, Curalo Lagoon and the seabed of four separate embayments including Calle Calle Bay in the north, Quarantine Bay and Nullica Bay in the west and East Boyd Bay in the south. Excludes wharf area and harbour facilities at Snug Cove; and breakwall and boat ramp near Quarantine Bay. **Ecological features** The area is habitat for a number of marine mammals and birds including threatened species. Areas of exposed sandflats in the Towamba River estuary are potential habitat for waders. Flora species present within the bay include Pigface (Carpobrotus glaucescens), New Zealand Spinach (Tetragonia tetragonioides), Fireweed Groundsel (Senecio linearifolius), Coastal Saltbush (Rhagodia candoleana ssp. candolleana), Calystegia soldanella, Sedge (Carex pumila), Knobby Club-rush (Isolepis nodosa), Bracken Fern (Pteridium esculentum), Coast Beard-heath (Leucopogon parviflorus), Coastal Wattle (Acacia sophorae), Geranium (Geranium homeanum), Native Storksbill (Pelargonium australe), Spiny-headed Mat-rush (Lomandra longifolia), Paperbark (Melaleuca armillaris), Wood Sorrel (Oxalis chnoodes), Coast Blowngrass (Agrostis billardieri), Long-hair Plume Grass (Dichelachne crinita), Blady Grass (Imperata cylindrica), Hairy Spinifex (Spinifex sericeus), Speargrass (Stipa flavescens), Prickly Couch (Zoysia macrantha), Climbing Lignum (Muehlenbeckia adpressa), Coast Banksia (Banksia integrifolia), Small-leaved Clematis (Clematis microphylla var. leptophylla), and Bidgee Widgee (Acaena novae-zelandiae). **Significance** (No data) **Social and Cultural values** Twofold Bay has a legendary maritime history of whaling and fishing. It is a safe harbour for shipping. The Bay is a focus for marine ecotourism such as whale watching and produces oysters, mussels, abalone and other fin-fish. It is the largest and deepest embayment in the South-East Corner bioregion. Reference Department of the Environment and Energy. 2017. Twofold Bay - NSW124, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW124***.
Ukerebagh Nature Reserve	**Site description** (No data) **Physical features** Ukerebagh Nature Reserve consists of Ukerebagh Island and a mainland portion within and adjacent to the Tweed River estuary. It occurs on the Tweed floodplain which is formed from Quaternary alluvial and ocean beach deposits of gravel, sand, silt, clay and peat. Ecological features Vegetation communities found within Ukerebagh Nature Reserve include littoral rainforest, swamp forest, mangrove forest, open forest and saltmarsh

Wetland	Key Features
	associations. Seagrass is common in Ukerebagh Passage and together with Ukerebagh Nature Reserve forms one of the larger saline wetland systems in the Tweed estuary. **Significance** (No data) **Social and Cultural values** Association from pre-European times to the present day is evident in identified values of both traditional and contemporary historical significance. Several Aboriginal sites and 28 species of bush foods and medicinal plants traditionally utilised by local Aboriginal people have been recorded within Ukerebagh Nature Reserve. Many Aboriginal families lived on Ukerebagh Island during the 1920s and 1930s. Ukerebagh Nature Reserve is instrumental in the maintenance of the cultural identity of local Aboriginal people. Reference Department of the Environment and Energy. 2017. Ukerebagh Nature Reserve - NSW111, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW111**.
Waldrons Swamp	**Site description** (No data) **Physical features** Draining forested creeks from Pollwombra Mountain, Waldrons Swamp superimposes amorphously upon the northern part of the Broulee (Bengello) relict dunefield that extends to the Moruya River. The dunal features are very significant geomorphologically and of great scientific interest. The main body of the swamp is 2 km inland (at the ancient beachline) with a narrow outflow channel of some 1.5 km length meandering and cutting through the dunefield to connect very intermittently to the ocean at Bengello Beach between Broulee and Moruya Heads. **Ecological features** A variable mosaic of closed Swamp Paperbark (Melaleuca ericifolia) shrublands, Gahnia, Carex and Cladium sedgelands, rushlands and periodically open water providing breeding, refuge, roost and forage habitat for protected and threatened terrestrial species. **Significance** (No data) **Social and Cultural values** Locally important for grazing , eel fishing, water conservation and environmental protection. The relict dunal system adjacent to and south of the swamp is a great scientific interest. Reference Department of the Environment and Energy. 2017. Waldrons Swamp - NSW125, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW125***
Wallaga Lake	**Site description** (No data) **Physical features** A permanently open estuary with considerable area (100 ha.) of sandflat exposed at low tide near the entrance. The lake backs up into convoluted shallow reaches of inflowing tributaries flanked by Eucalyptus open forest including Red Gum (Eucalyptus tereticornis), Southern Mahogany (Eucalyptus botryoides), Black Apple (Planchonella australis), Water Gum (Tristania laurina), Lilly Pilly (Acmena smithii), Grey Myrtle (Backhousia myrtifolia), Sweet Pittosporum (Pittosporum undulatum), Rough Tree Fern (Cyathea australis), and Late Black Wattle (Acacia mearnsii). Swamp Paperbark (Melaleuca ericifolia) occurs along much of the shoreline of the lake. Forested islands occur within the lake. The lake is drained by a relatively large catchment of mostly forested and some rural lands. **Ecological features** Upper reaches of tributaries contain saltmarsh habitats. The lake is mostly fringed by a Swamp Oak (Casuarina glauca) stand. Extensive eelgrasses indicate potential fish nursery habitat. Occasional mangrove specimens only. Waterbird and seabird habitat for resting and forage provided by sandflats.

Wetland	Key Features
	Significance (No data) **Social and Cultural values** Islands within the lake and the lake itself are of strong spiritual significance to local Aboriginal people. Dreamtime songlines link tribal kings such as King Merriman to the Lake. Approximately 60 middens have been recorded on the shore of Wallaga Lake. Spectacular scenic vistas from coastal vantage points near lake entrance; the presence of Gulaga (Mt. Dromedary) to the north-west and the seascape to the east and north-east (including Montague Island) combine to evoke a classic south coast scenescape of 'estuary-mountain-ocean'. Reference *Department of the Environment and Energy. 2017. Wallaga Lake - NSW126, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW126**.*
Wallagoot Lagoon (Wallagoot Lake)	**Site description** (No data) **Physical features** Wallagoot Lagoon is an example of a Simple Embayment Lake. Embayment lakes are formed in the same formative process as in drowned valley lakes, except that in this case a bay is cut off. Such lakes were formed in the Holocene marine transgression. Extensive sand spits and sandy islets occur at the eastern end of the Lagoon, total area of these features dependent on water level. **Ecological features** The Lagoon has extensive areas of seagrass beds (area unknown), and a variety of rushes and sedges occur and include Saltmarsh (Sarcocornia quinqueflora), Streaked Arrow-grass (Triglochin striata), Saw-sedge (Gahnia sp.), Common Reed (Phragmites australis) and Sedges (Juncus spp.) A total of 480 faunal records have been recorded in the Wallagoot Lagoon area to date. **Significance** (No data) **Social and Cultural** values Tourism, recreation, education, commercial and recreational fishing. Extensive evidence of Aboriginal occupation (recorded sites) surrounding the lagoon. Reference Department of the Environment and Energy. 2017. Wallagoot Lagoon (Wallagoot Lake) - NSW127, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW127***.
Wallis Lake and adjacent estuarine islands	**Site description** (No data) **Physical features** The geology of Wallis Lake consists predominantly of Quaternary sediments of gravel, sand, silt, clay and marine and freshwater deposits. The geology of the western and southern area of the lake consists of Carboniferous sediments of the Wooton Beds and includes sandstone, siltstone, claystone, shale, and limestone. The lake is largely underlain by Pleistocene barrier, dune and back barrier deposits and underlying these estuarine sediments. **Ecological features** Coastal lagoon with extensive seagrass beds [including Eelgrasses (Zostera capricorni) and the Seagrass Posidonia australis] (3,079 ha), areas of saltmarsh (405 ha), mangroves (79 ha) [including Grey Mangrove (Avicennia marina), and River Mangrove (Aegiceras corniculatum)], Ruppia sp. and algal (Hormisira banksii) beds. The extensive seagrass beds in this estuary comprise approximately 20% of total seagrasses in NSW. Saltmarsh communities are dominated by Sarcocornia quinqueflora. The saltmarsh communities grade into swamp woodland with dominant species including Swamp Oak (Casuarina glauca) and Paperbark (Melaleuca quinquenervia. Sea Rushes (Juncus kraussii) dominate the area behind the saltmarsh with patches of sedge (Baumea juncea), rush (Schoenoplectus sp.) and Common Reed (Phragmites australis). Yahoo Island also supports a low closed forest

Wetland	Key Features
	(rainforest) community and an extensive tract of open Cabbage Palm (Livistona australis) community. Wallis Island includes communities of Paperbarks and Cabbage Palms and Swamp Mahogany (Eucalyptus robusta), Spotted Gum (Eucalyptus maculata), Grey Ironbark (Eucalyptus paniculata) and Forest Red Gum (Eucalyptus tereticornis) forests. **Significance** (No data) **Social and Cultural values** Aboriginal middens have been recorded within Yahoo Island Nature Reserve. Reference *Department of the Environment and Energy. 2017. Wallis Lake and adjacent estuarine islands - NSW038, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW038***
Wamberal Lagoon	***Site description*** A shallow, brackish lagoon that is normally closed by a sandbar. Extensive flooded Baumea juncea, Juncus kraussii and Phragmites australis reedlands at the northern end support large frog populations. Parts of the dense Melaleuca ericifolia and Melaleuca nodosa scrub near Forresters Ck are normally inundated. The foredune is relatively well preserved and shows a vegetation succession from Spinifex hirsutus near the ocean to Banksia integrifolia and Melaleuca quinquenervia forest. Eleocharis species and Phragmites sp. occur on the lagoon shore. ***Physical features*** (No data) ***Ecological features*** (No data) ***Significance*** It is in good condition. Some of the catchment is still protected by dense vegetation. The dense vegetation acts as a nutrient sink and sediment trap. Septic pollution, urban runoff, rubbish dumping, and sedimentation are major problems for the continued wellbeing on the lagoon. The effects of frequent artificial opening are unknown. Some of the wetlands are recommended for conservation in SEPP No. 14 site numbers 907 and 909. The lagoon and foredune are in the Wamberal Lagoon Nature Reserve, and parts of the catchment have conservation zonings. ***Social and Cultural values*** The area is an important wildlife habitat, especially as so few coastal lagoons remain in good condition. It has great educational value, and guided tours are given to schools and other groups. The area is also used for recreation and is a valuable tourist attraction. Reference *Department of the Environment and Energy. 2017. Wamberal Lagoon - NSW179, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW179**.*
Wollumboola Lake	**Site description** (No data) **Physical features** Soils consists primarily of grey sandy loam underlain by heavy red clay derived from the Permian Wandrawandian siltstone common to the area. **Ecological features** The lake supports surrounding wetland areas of Casuarina forest, teatree scrub, saltmarsh and sedgelands. The bed of the lake supports seagrasses. Reports that wetland 365 consists of a narrow herbfield on the shores of the lake dominated by coastal saline tolerant species. Behind this is an area of rushes and sedges consisting of a mix of Common Reed (Phragmites australis), Salt Rush (Juncus kraussii) and the Sedge, Baumea juncea. It is only one of three sites containing Wilsonia rotundifolia in coastal NSW. Wetland 364 consists of a small bay in the northwest corner of the lake which support extensive sandflats and saltmarsh communities. The dominant species in the saltmarsh is Samphire (Sarcocornia quinqueflora). Shoreward from the saltmarsh is an area of mixed sedgeland

Wetland	Key Features
	consisting of sedge species and salt rush (Juncus kraussii). The bay is surrounded by a dense closed forest of Paperbark (Melaleuca sp.) and Swamp She-oak (Casuarina glauca). **Significance** (No data) **Social and Cultural values** Around 200 Aboriginal sites have been recorded in the area including symbolic / sacred sites, art sites, habitation sites and axe grinding grooves. Reference *Department of the Environment and Energy. 2017. Wollumboola Lake - NSW094, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW094*** .
Wooloweyah Lagoon	**Site description (**No data) **Physical features** The geology of Wooloweyah Lagoon is comprised predominantly of Quaternary sediments including alluvium. gravel, sand, silt, clay, beach sand and dune sand overlying Triassic-Jurassic sandstone, shale, and conglomerate. **Ecological features** Estuarine lagoon, and associated seagrass, mangrove and saltmarsh areas. Dominant plant species include the aquatic herb Bacopa monniera, Swamp Oak (Casuarina glauca), Spike-rush (Eleocharis equisetina), Rushes (Juncus spp.), Paperbark (Melaleuca quinquenervia), Water Couch (Paspalum distichum), Common Reed (Phragmites australis). **Significance** (No data) **Social and Cultural values** The Clarence Estuary was utilised by Aborigines for fishing and evidence of this includes oyster shell middens that have been recorded on Micalo Island. In the early 1800s Richard Craig pioneered the harvesting of extensive Red Cedar stands of the Clarence (Clancy, 1992). Cropping began with sugar cane farms in 1864 on the Clarence River floodplain. Reference Department of the Environment and Energy. 2017. Wooloweyah Lagoon - NSW039, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=NSW039***.
Queensland	
Bribie Island	***Site description*** Bribie is a low sand island, with an elevation less than 10 m. The island has formed the narrow Pumicestone Passage to the west. The wetlands occur as creeks, lagoons, swamps and tidal flats. The majority of the island's interior is flat with closed depressions. Creeklines are short or interrupted. Large swamps (hundreds to thousands of hectares in size) occur in the sand plain and supra-tidal zone. The most extensive geology is a formation of Holocene tidal flats and meadows of sand and mud found in central and western parts of the island along with Pleistocene estuarine deposits. Pleistocene sand ridges, and Holocene beach ridges occur along southern and eastern beaches. Soils are podzols (bleached sands) on the eastern dunes and gleyed podzolic soils with a higher clay content in the west. This is broken by more than 200 ha of peat swamp. Groundwater podzols are found in some of the wet areas. Recent soil samples have found the presence of acid sulfate soil deposits in south-western parts of the island. ***Physical features*** (No data) ***Ecological features*** The freshwater wetlands are primarily composed from six community types. Swamp paperbark (*Melaleuca quinquenervia*), swamp box (Lophostemon suaveolens), *Eucalyptus tereticornis*, flooded gum (*Eucalyptus grandis*), scribbly gum (*E. racemosa*), swamp mahogany (*E. robusta*), pink bloodwood

Wetland	Key Features
	(*Corymbia intermedia*), cabbage tree palm (*Livistona australis*) open forest on beach ridges and old estuarine deposits, open forest or woodland dominated by *M. quinquenervia* with *E. robusta* and no understorey except swamp water fern (*Blechnum indicum*), *Baumea*, *Restio* and *Villarsia* spp. ground cover. Heathland or sedgeland with Hakea actites, broad-leaved banksia (Banksia robur), *Leptospermum* spp. and swamp grasstree (*Xanthorrhoea fulva*), *Ghania*, *Epacris* and *Restio* species, with emergents such as *E. robusta*, brush box (*Lophostemon confertus*), *L. suaveolens*. Wallum banksia (*Banksia aemula*) low open forest and woodland with black sheoak (*Allocasuarina littoralis*) and open heath. *M. quinquenervia*, and heathland or sedgeland on beach ridges. Open heath with *Caustis recurata*, *Xanthorrhoea fulva*, *Coleocarya gracilis*, *Sowerbea juncea* and *Leptospermum*, *Banksia* and *Bauera* species on beach ridge systems. Eight hundred and fifty hectares of intertidal and low coastal shrubland and forests occur in the south, west and north. These areas have communities with grey mangrove (*Avicennia marina*), river mangrove (*Aegiceras corniculatum*), yellow mangrove (*Ceriops tagal*), spotted mangrove (*Rhizophora stylosa*), large-fruited orange mangrove (*Bruguiera gymnorhiza*), milky mangrove (*Excoecaria agallocha*) and black mangrove (*Lumnitzera racemosa*), swamp she-oak (*Casuarina glauca*), Salicorna quinqueflora, Triglochin striata and sand couch (*Sporobolus virginicus*). ***Significance*** At least 850 ha of gazetted intertidal and estuarine shrubland and forests occur in the south, west and northern shorelines of the island. On the island, most wetland and vegetation mosaics are hundreds to thousands of hectares. These communities are considered highly significant representatives of their type in south-east Queensland because of their size and naturalness. A survey of intertidal vegetation by the Queensland Herbarium has delineated 26 communities that intersect the Bribie wetland. These include 21 communities of State significance, three communities with regional significance, and two communities with local or major significance. Significant areas of sub-tidal sea grass occur in Pumicestone Passage. These areas are protected by a wetland reserve and fish habitat area in an area of more than 7000ha on the western side of the island. The shorelines and tidal wetlands of the island are listed in the Moreton Bay Ramsar area. The area provides refuge for threatened wildlife and is species rich. ***Social and Cultural values*** Bribie Island has two listings in the Register of the National Estate: Pumicestone Passage and Bribie Island, and for the World War II fortifications in the northern ocean-side of the island. The area is recognised for its value to migratory waders, and local naturalist groups visit the island for annual bird surveys. The island has been used by Brisbane universities for research into oceanography, coastal geomorphology, and for coastal heath studies. QPWS provides educational facilities. The Department of Primary Industries Fisheries Branch has an aquaculture research facility on the south-eastern part of the island. The beaches attract tourists from the greater Brisbane area and picnic facilities and parks are provided for this purpose. The intersecting Pumicestone Passage is very high natural and scenic amenity, and the natural quality of its habitats attract naturalists and fishermen. The value to commercial fisheries is very high due to the spawning, recruitment, refugia and feeding values for aquatic fauna in the passage. No commercial fishing is allowed within the passage. More than 50 cultural heritage sites have been identified on the island. Numerous middens, artefact scatters, scarred and carved trees have been identified. Highly significant evidence from campsites and villages indicates that Indigenous peoples have lived on the island for more than 2,000 years. European settler heritage (additional to the war fortifications) includes historic wooden lighthouses (built in 1896) and a fish cannery site built in the early 1900s. Reference

Wetland	Key Features
	*Department of the Environment and Energy. 2017. Bribie Island. - QLD189, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD189**.*
Burrum Coast	***Site description*** The site comprises the coastline and estuaries between, and including, Beelbi and Theodolite creeks. It is made up of extensive intertidal flats associated with the mouth of the Burrum River and adjacent coastline; mangrove and saltflat systems along estuaries and coastline; freshwater wetlands dominated by wallum heaths, and lesser areas of sedgeland and swamp forests. ***Physical features*** Landforms: shallow, protected marine waters; broad intertidal sand flats and tidal deltas; fringing mangrove/saltflat; beaches backed by frontal dunes; and beach ridges with swampy swales. Geology: dominated by relatively recent (Holocene) deposits - sandy beach ridges, muddy estuarine sediments and sandy tidal deltas; much larger areas of Pleistocene sandy beach ridge deposits occur behind the more recent ones; undifferentiated Quaternary freshwater swamp deposits of mud and peat occur in the lower parts of the beach ridge systems. Soils: calcareous sands on the beaches, siliceous sands in the Holocene beach ridges, siliceous podosols in the Pleistocene beach ridges, sands/loams/muds in mangrove and saltmarsh, and acid peats and peaty sands in the low-lying swampy areas between the beach ridges. ***Ecological features*** Major habitat types include seagrass beds, mangrove low closed forest to open shrubland, saltmarsh, bare claypan, and extensive bare sandflats (exposed at low tide); sedgelands, open forest/woodland and closed heath occur in swampy areas of the beach ridge systems; fringing woodlands and open forests, dominated variously by *Casuarina*, *Melaleuca* and *Eucalyptus* spp., occur adjacent to the beaches and wetland communities. The mangrove communities vary in structure and composition - low closed forest of grey mangrove (Avicennia marina) and/or club mangrove (*Aegialitis annulata*) shrubs fringes the larger estuaries; large-fruited orange mangrove (*Bruguiera gymnorhiza*) and/or yellow mangrove (*Ceriops tagal*) and/or river mangrove (*Aegiceras corniculatum*) and/or spotted mangrove (*Rhizophora stylosa*) low forest to open shrubland fringes smaller estuaries; less frequently inundated areas support yellow mangrove and/or river mangrove open shrubland; while milky mangrove (*Excoecaria agallocha*), myrtle mangrove (*Osbornia octodonta*) and cotton tree (*Hibiscus tiliaceus*) are confined to the landward fringes of the mangrove forest and shrubland. Saltmarsh areas behind the mangroves are variously dominated by sand couch (*Sporobolus virginicus*) grassland and samphire herbland (e.g. samphire (*Halosarcia indica*), seablite (*Suaeda australis*) and *Tetragonia tetragonoides*). These areas may also be fringed by woodlands of *Melaleuca* spp. and swamp she-oak (*Casuarina glauca*). The swampy areas on peaty soils comprise three community types - open forest/woodland dominated by *Melaleuca* spp. but including cabbage tree palm (*Livistona australis*), *Tristania suaveolens* and *Eucalyptus tereticornis*; closed heath with species including *Boronia falcifolis*, wallum bottlebrush (*Callistemon pachyphyllus*), wallum tea-tree (*Leptospermum semibaccatum*), *Restio fastigiatus* and common heath (*Epacris obtusifolia*); and sedgeland, common species including *Schoenoplectus litoralis*, sea rush (*Juncus kraussii*) and sword grass (*Gahnia sieberiana*). ***Significance*** (No data) ***Social and Cultural values*** Several high value Aboriginal cultural sites occur, mainly along the Burrum and Gregory rivers and behind the beach at Woodgate. Important and increasingly popular for tourism and recreation, particularly for fishing and boating. Valuable area for research into both natural and cultural features of the Hervey Bay coastline. Reference

Wetland	Key Features
	Department of the Environment and Energy. 2017. Burrum Coast - QLD126, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD126****.*
Bustard Bay Wetlands	***Site description*** The site includes the embayment and estuaries between Rodds Peninsula and Round Hill. It is comprised of three interconnected, mangrove dominated, estuarine wetlands on and around Middle Island (Pancake, Middle and Jenny Lind creeks), plus two similar small estuaries at the southern end of Bustard Bay (Eurimbula and Round Hill creeks); an extensive non tidal, seasonal, freshwater wetland exists between the two southern estuaries, in Eurimbula National Park. ***Physical features*** The coastline of Bustard Bay consists largely of Holocene beach ridge deposits (including a large exposed sandmass on Middle Island); Holocene estuarine deposits dominate the western side of Middle Island and the major estuaries; on the north of Middle Island, Bustard Head and Clews Point are formed on unnamed granites of Triassic origin. A small area of the same granite occurs on the west side of Middle Island, near the centre of the Pancake Estuary; the estuarine deposits are bounded variously by Quaternary alluvium and Agnes Water volcanics (Triassic), an outcrop of which also forms Round Hill Head. There is considerable variation in the sediment of the estuaries - Round Hill Creek is predominantly sandy with a small fraction of fine mud, Eurimbula and Middle creeks are largely fine mud with small amount of sand at their mouths, Jenny Lind and Pancake creeks are sandy. ***Ecological features*** The dominant plant community in the site is mangrove forest and shrubland, with relatively small areas of saltflats behind; mangroves exhibit distinct banding from seaward to land : Avicennia and/or Aegialitis fringe on seaward margin; Rhizophora and/or Avicennia and/or Ceriops zone (main zone); Ceriops and/or Avicennia and/or Rhizophora zone; coastal saltflat (sand couch (*Sporobolus virginicus*) and/or chenopods); Ceriops fringe (between saltflat and terrestrial vegetation); several intertidal seagrass beds are situated in Pancake Inlet and in the small bay formed between Bustard Head and Clews Point. Of significance is the somewhat unusual occurrence of a fringing coral reef in an estuary (Pancake); the site supports a variety of marine fauna (e.g. 25 crab species and 29 mollusc species in Eurimbula and Round Hill creeks), as well as numerous shore, sea and land birds. ***Significance*** The Round Hill Head area is one of only three places where James Cook went ashore on his journey up the east coast of Australia in 1770. The site provides popular anchorages for recreational boats travelling up and down the coast, as well as unique natural features (landscape, flora and fauna, estuarine coral reef) in a relatively undisturbed condition. ***Social and Cultural values*** James Cook came ashore at Round Hill Head during his voyage up the east coast of Australia in 1770, and the Bustard Head Lighthouse was the second to be built in Queensland in 1868. Bustard Head also has a cemetery associated with early exploration of the area. Aboriginal shell middens occur throughout the area and there is considerable intrinsic value to fisheries as habitat and crab fishery. Bustard Bay supports a trawl fishery, while the estuaries support crab fisheries. Middle Island supports a small grazing enterprise, and several shipwrecks are located in Bustard Bay. Scientific interest and research values: Especially in the coral reef. The area is becoming increasingly popular as a tourist destination, especially as an access point to the Great Barrier Reef. Reference

Wetland	Key Features
	*Department of the Environment and Energy. 2017. Bustard Bay Wetlands - QLD127, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD127**.*
Colosseum Inlet - Rodds Bay	***Site description*** The site is comprised of the area of the Curtis Coast between Wild Cattle Island and Rodds Peninsula. It contains three large estuaries/embayments with extensive mangroves and lesser areas of coastal saltflat and seagrass beds, supporting fauna of state and national significance. ***Physical features*** Geology/geomorphology: marine lowlands surrounded by flat to undulating terrain; geology is predominantly Quaternary estuarine (Holocene) and alluvial (Pleistocene) deposits fringed by Agnes Water granites (Triassic) and Miriam Vale granodiorites (Permian); Hummock Hill Island has an area of the latter granites surrounded by estuarine deposits and Quaternary beach ridge deposits on the north and south ends; a small area of Quaternary tidal delta sands occurs at the mouth of Colosseum Inlet. Soils: the lowlands are mainly saline clays (Olsen et al., 1980). ***Ecological features*** Extensive mangrove forests and shrublands; restricted seagrass beds; coastal saltflats (claypan and saltmarsh) and a small coral reef. Mangroves exhibit distinct banding from seaward to land : Avicennia fringe on seaward margin • Rhizophora zone (main zone) • Ceriops zone • Coastal saltflat • Ceriops fringe (between saltflat and terrestrial vegetation). Seagrasses are generally intertidal due to the natural turbidity of the waters - most abundant species are *Zostera capricornia*, *Halophila ovalis* and *Halodule uninervis*. Coastal saltflats range from bare claypan, through low/dwarf open halophytic shrubland (e.g. *Sarcocornia* spp. and *Suaeda* spp.), to open and closed grasslands dominated by sand couch (*Sporobolus virginicus*). ***Significance*** (No data) ***Social and Cultural values*** Several sites of archaeological importance occur in Colosseum Inlet and around Rodds Bay. These waterways are popular for boating, providing an extensive sheltered passage along the coast, as well as mooring sites inside Colosseum Inlet and Rodds Harbour. It is an important recreational fishing/crabbing area, and also an important source of commercial fisheries species. Hummock Hill Island supports a small grazing operation. Tourism is gaining momentum with several resort proposals in this area. There are also mineral reserves under exploration. Reference *Department of the Environment and Energy. 2017. Colosseum Inlet - Rodds Bay - QLD129, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD129**.*
Deepwater Creek	**Site description** (No data) **Physical features** The Deepwater landscape is characterised by a gently sloping alluvial plain that is closed by a coastal dunefield in the north and east. The catchment includes extensive Quaternary alluvium and Tertiary sandstone formations. The sandstones occur in elevated western areas and alluvium occurs in the north, east and south-eastern plains. Outcrops of the Triassic volcanics are found in the north and east. A small highland area in the south west of the catchment is Triassic granite. Minor formations of Jurassic and Triassic sandstone and mudstone occur in southern areas. Dune formations contain Holocene sands, and the estuary

Wetland	Key Features
	contains Holocene deposits. Gradational yellow massive earths (Gn2.3) predominate in elevated and western sections of the catchment. Soloths (Dy 3.41) have formed in the low eastern areas and deeply leached siliceous sands (Uc 1.21) have formed on the coastal dunes. Most discharge is produced from northern watersheds and shallow sandy aquifers. Other significant creeks include Reedy, Fullers, Bullock, Five mile, Pearson, Blackwater and Pig creeks. The drainage network is organised, convergent and unidirectional. Waterholes are found in the main channel and swamp formations occur near the coastal dunes. The climate is 'temperate humid' but a close proximity to the sub-tropics in the north is associated with thunderstorms and high rainfall intensity. **Ecological features** The inland alluvial and palustrine environments and ecosystems (together with the Eurimbula and Bustard Bay area) provide the largest and least disturbed northern representatives of their type. The estuary is flanked by more than 100 ha of littoral forest, grass meadow and reed beds. Closed Ceriops mangrove forests dominate with Avicennia forest and Sporobolous grassland. Aegiceras and Rhizophera forests occur in smaller communities. Sporobolous meadows are associated with Juncus, Casuarina and Melaleuca communities. Coastal rocky headlands support Themeda triandra and heath communities while adjacent foredunes support Themeda, Allocasuarina, Banksia and Accacia species. Further inland, the Quaternary sand plain and dune swales support microphyll and notophyll rainforest and open forest including Eucalyptus, Corymbia, Melaleuca, Callitris and Livistonia species. The swamps and ponded areas inland of the dunes support fringing sedge Leperonia articulata, meadows with Blechnum indicum and areas of Urtricularia, Lepidosperma, and Philydrum species. These areas merge with the prevalent alluvial ecosystems of wet heaths with Melaleuca, Banksia, Hakea, Leptospermum and Baekia species (typical wallum), open riparian forests of Melaleuca quinquenervia, Eucalyptus robusta, E. tereticornis, E. racemosa, Corymbia intermedia and Lophostemon suaveolons. On slopes of seasonally waterlogged Tertiary sediment or volcanic rock, open forests and grassy woodlands with Eucalyptus, Corymbia, Melaleuca and Banksia species are prevalent. **Significance** The Deepwater catchment and lowlands provide a large and relatively intact wetland system at the northern limit of the coastal lowland 'wallum' ecosystem of south-east Queensland. The area is one of the least disturbed mainland representatives for coastal acid freshwater wetlands in Queensland. The area is part of the Macpherson-Macleay zone of biogeographical transition, an area with enhanced species diversity. The sandy beaches support the second largest aggregation of mainland breeding sea turtles in Queensland and provide the only mainland nesting site used repeatedly by the nationally endangered leatherback turtle. **Social and Cultural values** This is an important area for nature-based recreation (camping, boating and fishing), and it provides a destination for regional communities. Shell middens are found on the foredunes. The Gooreng Gooreng Aboriginal people have a tradition with the land. Captain Cook visited the area in 1770, which may have been his first landing place in Queensland. Captain Cook's landing just to the north of the mapped area (Town of 1770) attracts tourists to the Deepwater beaches and headlands. The 1770 area has high social value in south-east Queensland. The mineral-rich Deepwater Beach ridge dunes are of high economic and natural value. The dune field is listed in the Register of the National Estate. <u>Reference</u> Department of the Environment and Energy. 2017. Deepwater Creek - QLD182, in Australian Wetlands Database. Department of the Environment and Energy,

Wetland	Key Features
	Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD182***.
Fraser Island	***Site description*** Fraser Island is the largest sand island in the world. It has huge reserves of fresh groundwater and characteristic window and barrage dune lakes. The topography of the island is characterised by rough dunes reaching an elevation of more than 220 m. Steep cliffs are common on the east coast and extensive flats are common on the west. The catchment is that of the permeable Fraser Island sandmass and there is relatively little direct runoff. ***Physical features*** Landform: intertidal flat, beach, floodout, supratidal flat, drainage depression, stream channel, stream bed, tidal creek, estuary, swamp, swale and lake; uplands are rough dunes with high relief. General geology: Fraser Island is dominated by a series of overlapping parabolic dunes which have been deposited as a result of inland migration of sands from coastal blowouts. These Quaternary and older siliceous sands overlie Cretaceous sediments of the Maryborough and Burrum sediments. Igneous intrusives at Indian Head and Waddy Point are the only true rocks on the island. The sand dunes were derived from the erosion of sandstones from coastal river valleys in northern NSW and southern Queensland. These late Pleistocene deposits were transported up the coast to their present position with successive rises and falls in sea level due to eustatic oscillations. The Pleistocene units are characterised by pure white sand while the Holocene dunes of pale yellow-brown sand overlap and, in some cases, form a veneer over the Pleistocene units. Soils: the soils are mostly quartzipsamments. They are deep sands with an A horizon of variable development and some deeper organic staining. Giant podosols occur with thick, richly coloured B horizons. There are also some groundwater podosols and peats. ***Ecological features*** The following wetland and related environments occur on the island: (i) permanent creeks fed by springs draining the major sand aquifers, on the east and west of the island. Rainforest communities are found along Eli and Wanggoolba creeks and comprise notophyll vine forests, notophyll palm forests and microphyll vine forests. Six species of rare or vulnerable plants have been recorded from the rainforests. Isolated dense palm forests of piccabeen palm (*Archontophoenix cunninghamiana*) are found in sheltered areas along the streams. Little information is available on aquatic macrophytes within the creeks. Some waterways support different morphs of the Fraser Island sunfish (*Rhadinocentrus ornatus*); (ii) dry sclerophyll forests or paperbark woodland (swamp paperbark (*Melaleuca quinquenervia*)) grading into paperbark swamp at the margins of the lakes. Forests are structurally variable and can include forest red gum (*Eucalyptus tereticornis*), red bloodwood (*Corymbia* spp.) and swamp box (*Lophostemon suaveolens*) as well as swamp mahogany (*Eucalyptus robusta*) and weeping cabbage palm (*Livistona decipiens*) in moister sites; (iii) open shrublands and low woodlands dominated by the wallum banksia (*Banksia aemula*). Other associated flora includes black sheoak (*Leptospermum trinervum*), monotoca white banksia and mallee forms of brush box. A notable species is Wide Bay boronia (*Boronia rivularis*) which occurs near lakes to the north end of the island, and which is recorded as a rare species with a restricted habitat. The acidic waters within this "wallum" environment are inhabited by a specialist frog fauna which has evolved in response to apparent constraints imposed on most other frogs by the acid waters. These "acid" frogs are represented by wallum rocketfrog (*Litoria freycineti*), Cooloola sedgefrog (*L. cooloolensis*), wallum sedgefrog (*L. olongburensis*) and wallum froglet (*Crinia tinnula*). The Fraser Island sunfish (*Rhadinocentrus ornatus*) is confined to wallum waters; (iv) freshwater perched water table window lakes and barrage dune lakes with marginal bands of sedges, dominated by *Lepironia articulata*. The sedge *Schoenus scabripes* is notable as a rare species restricted to highly specific habitats. Exposed areas of moist sand on lake

Wetland	Key Features
	margins area colonised by sundews (*Drosera spatulata*), dwarf yellow-eye (*Xyris juncea*) and fairy aprons (*Utricularia dichotoma*). A short-necked tortoise *Emydura* sp. is confined to island lakes and may be sub specifically different to current forms. The lakes are filled with either clear "white" or discoloured "black" water. Most lakes are oligotrophic and have depauperate fauna and flora. The lake catchments are closed and the organisms that inhabit them are isolated with the potential to diverge morphologically and genetically. Water birds occur in low numbers. Lake Wabby has a diverse fish fauna of 11 species, including the rare honey blue-eye (*Pseudomugil mellis*). The ancient chironomid midge *Anaphrotenia lacustris* is endemic to Lake Boernigin; (v) saline soil communities including mangroves, salt marshes and salt flats occur in the intertidal zones. The mangrove communities are dominant in terms of area and comprise 12 species. The dominant species of mangroves are grey mangrove (*Avicennia marina*), river mangrove (*Aegiceras corniculatum*), yellow mangrove (*Ceriops tagal*) and spotted mangrove (*Rhizophora stylosa*). Some of the mangrove species are at the southern limit of their distributions and some are of disjunct occurrence. Salt marshes and supratidal flats are dominated by samphires such as *Arthrocnemum* spp., *Suaeda* spp. and beadweed (*Salicornia quinqueflora*). sand couch (*Sporobolus virginicus*) is common; (vi) intertidal habitats including surf, sheltered beach and estuaries also occur. ***Significance*** The Fraser Island wetlands are significant because of their distinctness and because they are the best Australian example of a complex of wetlands characteristic of the South Eastern Queensland bioregion. Fraser Island possess the most numerous, most diverse, largest and highest perched lakes in the world. The lakes are notable for their palynology, climatology, ecology and, particularly, their hydrology. The hydrology and physicochemical properties of the groundwater are of notable scientific significance due to the relatively long residence time of water in the sandmass (70-100 years) and the characteristics of waters passing through the soil profiles. This island is also significant as a habitat for a diverse range of endemic, rare, and threatened fauna and flora. Fraser Island is also a World Heritage site. ***Social and Cultural values*** Fraser Island has a very long history of Aboriginal occupation. Only a small proportion of Aboriginal sites have been identified to non-Aboriginal people. Details of cultural landscapes with symbolic, ceremonial, and/or mythological significance to Aboriginal people are therefore not widely known. In addition to the above a large number of prehistoric sites have been identified. Fraser Island is also significant because of the number of sites relating to European occupation e.g. Bool Creek as the site of the first European landing, by Flinders from the Investigator. Currently Fraser Island is one of the most important tourism and recreational destinations in southeast Queensland. Reference *Department of the Environment and Energy. 2017. Fraser Island - QLD131, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD131****.*
Great Barrier Reef Marine Park	**Site description** (No data) **Physical features** The Great Barrier Reef is not a continuous barrier but a broken maze of coral reefs, some with coral islands (or cays). The reef comprises some 2,500 reefs which range in size from less than one hectare to more than 10,000 ha, and in shape from flat platform reefs to elongate ribbon reefs. There are 71 cays on the reef. The reefs are composed of the accumulated remains of animal calcium carbonate skeletal material and plant material, supporting a veneer of living plants and animals. The reef can be divided into three distinct sectors. The northern sector (north of latitude 16°S) contains many patch reefs with cays. Of particular interest are the low

Wetland	Key Features
	wooded islands which are coral cays carrying mangrove communities. The central sector (from 16°S to 21°S) is characterised by scattered platform reefs which are separated from fringing reefs of the mainland coast and coastal islands by a channel 15 km wide in the north and 50 km wide in the south. The southern sector (from 21°S to 24°S) is characterised in the north by a tightly packed maze of wall-like reefs separated by channels which carry strong tidal currents. To the south the reefs are tightly packed patch reefs with large patch reefs at the very southern end having well developed vegetated coral cays. **Ecological features** The Great Barrier Reef Marine Park contains a variety of habitats in a number of ecosystems. The area is recognised for its seagrass beds, estuarine wetlands, mangrove woodlands, island cays and coral atolls. The reef formations owe themselves to the ability of corals to produce substantial skeletons of calcium carbonate. Many of the corals have a variety of growth forms (branching corals, massive brain corals, plate-like corals, encrusting corals and mushroom corals) which relate not only to the genetic makeup of the corals but also, in part, to the hydrological regime and exposure of the location in which they develop. **Significance** (No data) **Social and Cultural values** The great diversity of life forms, especially in the endemic species, makes it an area of enormous scientific importance. It is an area that is recognised as being of great natural beauty and wonder and as such is one of Australia's most recognisable natural features. The area is extensively used for tourism and recreation. The area contains many archaeological sites of Aboriginal and Torres Strait Islander origin. There are over 30 historic shipwrecks in the area, and on the islands, there are ruins and operating lighthouses. Reference Department of the Environment and Energy. 2017. Great Barrier Reef Marine Park - QLD100, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD100***.
Great Sandy Strait	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
Lake Coombabah	***Site description*** Lake Coombabah is a tidal lake at the mouth of Coombabah Creek. The lake and swamps have formed in the tidal delta and coastal plain of southern Moreton Bay. ***Physical features*** The majority of the wetland has formed on marine plain and alluvium. The upper alluvial and colluvial slopes occur on sub-coastal hills and rises. Tidal reaches and Melaleuca swamps in low lying and supra-tidal areas occur on Holocene muds and sands. Small beach ridge dunes to the east formed during the Holocene. The coastal flats are surrounded by Quaternary alluvial flats. The sub-coastal hills have developed from Devonian-Carboniferous geology of mudstone, shale and conglomerate. The beach ridge dunes have formed deep siliceous sands. Dune swales and swamps contain acid peat soils that are frequently waterlogged (e.g. humic podzols). Some supratidal freshwater swamp zones have developed peat profiles. Humic gley soils typically occur in old tidal channels and depressions, and they have permanently wet subsoils. More saline soils include solonchaks. Gleyed podzolics occur upslope of the tidal soils. Yellow podzolics are prevalent on alluvium and colluvium. Erodible sandy duplex soils with impermeable subsoil occur on elevated slopes, whilst seasonally waterlogged podzolics (some support perched water tables) occur on lower slopes. More than half of the lowland alluvial and coastal plain area is affected by acid sulfate soil deposits.

Wetland	Key Features
	Ecological features The upper watershed forms a mosaic of tall forests and woodlands with *Corymbia citriodora*, *Eucalyptus siderophloia*, *E. major*, *E. seeana* and *E. racemosa* with *Angophora*, and *Lophostemon* species. The lowland communities include Mangroves with Avicennia marina and Casuarina glauca, saltmarsh communities with *Sporobolus virginicus*, *Suaeda* and *Salicornia* species, *Casuarina glauca* forests with *Melaleuca quinquenervia*, forests with *M. quinquenervia*, *Eucalyptus robusta*, and *Blechnum indicum* with heath representatives such as *Restio* species, wet heath with *Restio pallens*, *R. tetraphyllus*, *Leptocarpus tenax*, *Epacris obtusifolia*, *Leptospermum juniperinum* and *Melaleuca nodosa*, tall heaths with *Banksia aemula*, *Leptospermum trinervium*, *Acrotriche aggregata* and *Leucopogon lanceolatus*, low heaths with *Bauera captitata*, *Hibbertia salicifolia*, *Epacris pulchella*, *Leucopogon species*, and Boronia species, lowland forests and woodlands with *Corymbia tessellaris*, *E. intermedia, Lophostemon confertus*, and *M. quinquenervia*, woodlands with *E. pilularis, E. crebra, E. tereticornis, E. intermedia, Lophostemon confertus*, *Acacia* species and *Callitris columellaris*, and open woodlands and grasslands with *E. pilularis, E. tereticornis, Xanthorrhoea* species, *Haemodorum tenuifolium, Tricoryne elatior, Xyris complanata*, and *Dianella caerulea*. ***Significance*** The Coombabah wetlands are significant because they are the most southerly lake and coastal swampland representatives in the bioregion, and because the area provides significant wildlife value and refuge habitat. Remnant vegetation mosaics are 10s to 100s of hectares in size. Remnant connectivity is poor and mosaics occur primarily as isolated fragments. Remnants have low to modest integrity, primarily due to numerous edge effects, illegal waste disposal and weed growth, clearing and fire. Weeds in the lowland areas include groundsel (*Baccharis halimifolia*), ragweed (*Ambrosia species*), introduced pine wildings and various pasture and annual species. Saline or brackish lowland wetlands are included in the Moreton Bay Ramsar area. Coombabah Lake and confluent tidal creeks intersect 41 mosaics of significant intertidal vegetation and tidal beds. The mosaics incorporate an area of about 500 ha. The Queensland Herbarium surveyed the tidal and near-tidal coastal vegetation and found 22 significant mosaics. Eleven mosaics have State significance and 11 have regional significance. Two Gazetted fish habitat areas extend through the tidal lake. The habitat areas include about 560 ha of the tidal wetland. The majority of the tidal lake and surrounding swamp area is used by waders for feeding and roosting. ***Social and Cultural values*** The Lake Coombabah area includes Ramsar and fish habitat areas because of its high value to bird and fish life. This wildlife activity attracts naturalist groups and bird watchers who survey the movement of migratory waders. The area is also popular with boat users. The Gold Coast City Council and QPWS supports the use of the area for natural history education, and local schools use the facilities for their studies. This is the last remaining representative of its type and size in the mainland area of the Gold Coast. The wetland area has high heritage value to the Kombumerri people. The area contains sites and relics such as shell middens and artifacts that indicate the use of natural resources by indigenous people for more than 5,000 years. These people harvested fish, crayfish, shellfish and dugong, as well as macropods, invertebrates and reptiles. The lowlands also provided vegetables and fruit, yams, nuts, berries, seeds etc. The area was used as a meeting and feasting place, and a place for ceremonies. The area also holds evidence of the development of the area by white settlers. The white settlers grazed cattle, cut and milled the timber, and fished the fisheries. From the 1950s to the present, the area has been marketed as a recreational, tourist and urban destination. Reference

Wetland	Key Features
	Department of the Environment and Energy. 2017. Lake Coombabah - QLD194, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD194*** .
Lake Weyba	***Site description*** The site comprises the area which covers that part of Noosa National Park south of the original headland park and the adjacent Lake Weyba. ***Physical features*** General geology: two geological units are represented. The majority of the area is of Pleistocene origins as old tidal delta sand deposits. The landform is level sand plain with humus podosols and peaty podosols on poorly drained plains and depressions. These low-lying areas are seasonally waterlogged, and the water table can be permanently close to the surface. Depression areas are permanently waterlogged. The western part of the block is on Myrtle Creek sandstones of Triassic/Jurassic origins. The landform here is gently undulating rises of coarse grained quartzose sandstones. Soils are yellow podosolics or yellow earths, low in nutrients and with little or no structure. ***Ecological features*** (No data) ***Significance*** (No data) ***Social and Cultural values*** Increasingly used for recreation. Reference *Department of the Environment and Energy. 2017. Lake Weyba - QLD133, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD133***.
Lower Mooloolah River	***Site description*** The Mooloolah River runs through a long reach of sandy coastal plain to become a delta with small islands, bars and meander channels. ***Physical features*** The Mooloolah River is pinned to the north by a beach ridge plain, alluvium, rocky headland, and urban infrastructure such as canals. The landscape is very gently to gently inclined with occasional very low rises. Most of the lower Mooloolah River is derived from Quaternary alluvium deposits. Some low rises and ridgelines are formed on sandstone, siltstone, shale, and ferruginous material formed during the Triassic-Jurassic period. The majority of coastal sands and silts in the lowest areas have formed from deposits of Holocene tidal sandy mud or peat-mud. Humic gley soils occur on Quaternary alluvium, while bleached sandy soils with pans (humic podzols, ground water podzols) are found in northern areas. The soils are generally nutrient poor and poorly drained. Hummock microrelief is found in areas of frequent waterlogging. Acid sulfate soil deposits with Jarosite occurs in the majority of low-lying areas. ***Ecological features*** Eight vegetation associations occur in the lower floodplain. These are *Eucalyptus tereticornis*, swamp paperbark (*Melaleuca quinquenervia*), scribbly gum (*E. racemosa*), and pink bloodwood (*Corymbia intermedia*) open forest on old estuarine deposits, *M. quinquenervia*, swamp box (*Lophostemon suaveolens*), *E. tereticornis*, flooded gum (*E. grandis*), *E. racemosa*, swamp mahogany (*E. robusta*), *C. intermedia*, cabbage tree palm (*Livistona australis*) and piccabeen palm (*Archontophoenix cunninghamiana*) open forest on old estuarine deposits, *E. robusta*, *L. suaveolens* with *M. quinquenervia* open forest on old estuarine deposits, E. *robusta, E. racemosa*, red bloodwood (*C. gummifera*), *M. quinquenervia* open woodland, *L. suaveolens* on old estuarine deposits, *E. racemosa*, red mahogany (*E. resinifera*), *C. gummifera* woodland on old estuarine deposits, swamp stringybark (*E. conglomerata*), Queensland white stringybark (*E. tindaliae*), *E. robusta*, *C. gummifera* and *Syncarpia glomulifera* in woodland or open forest on old estuarine deposits, closed heathland and sedgeland commonly with Hakea actites, broad-leaved banksia

Wetland	Key Features
	(*Banksia robur*), *Leptospermum* spp. and swamp grasstree (*Xanthorrhoea fulva*) on old estuarine deposits with emergents such as *E. robusta*, *E. racemosa*, *E.conglomerata*, *M. quinquenervia*, and black sheoak (*Allocasuarina littoralis*), and open to closed heathland/sedgeland with *M. quinquenervia* on old estuarine deposits. Aquatic emergents include *Phragmites*, *Lepironia*, *Ghania* and *Baumea* species. Estuarine species include river mangrove (*Aegiceras corniculatum*), grey mangrove (*Avicennia marina*), spotted mangrove (*Rhizophora stylosa*), large-fruited orange mangrove (*Bruguiera gymnorhiza*). ***Significance*** The Mooloolah River wetlands are significant because of they are a good representative of a number of wetland types and coastal environments, and because of the diversity of habitats, wildlife and provision of wildlife refuge. ***Social and Cultural values*** Two sites are listed in the Register of the National Estate; these are the Mooloolah River National Park and the Currimundi Lake Environmental Park. These areas are recognised and celebrated by local naturalist and conservation groups for their annual flower displays. The Mooloolah River and much of the mapped area is culturally significant to Indigenous peoples. Oyster middens have been found on the river banks and bora rings have been found in the area. Swards of Blechnum indicum within the Melaleuca forests provided a food source for Indigenous people. Evidence of Indigenous artefacts and tools is found in scatters in eastern coastal areas of the Mooloolah floodplain along with scarred trees. Reference *Department of the Environment and Energy. 2017. Lower Mooloolah River - QLD187, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD187**.*
Moreton Bay Aggregation	This site is listed as an Internationally Important Wetland. Key features are listed in Table 7-1**.**
Noosa River Wetlands	***Site description*** Spectacular and extensive system of freshwater, brackish and saline lakes, marshes, heathlands and estuarine wetlands associated with the Noosa River; it has unique landforms, vegetation and fauna. ***Physical features*** The Noosa River flows across a low lying, low gradient coastal plain, between the Cooloola sandmass on the coast and a series of sandstone hills (Benham Range) a short distance to the west; this plain extends to the coast, east of Lakes Cootharaba and Cooroibah. The entire plain is generally sandy (Quaternary beach, estuarine and lacustrine deposits). Lakes Cootharaba and Cooroibah are open ended; Como, Weyba and Doonella are cul-de-sacs; and Cooloola is isolated. Lakes Cooloola and Como are delta lakes, formed by deposition of sediment from the Noosa River where it enters Lake Cootharaba (which was formerly much more extensive). South of Lake Cooroibah, the river becomes more typically estuarine, with numerous low sand/mud islands, adjacent saline flats, and tidal delta and bars near the river mouth. Lake Weyba is located south of the Noosa estuary and, while not strictly a part of the Noosa River Lakes system, is tidally connected to the estuary. ***Ecological features*** Major habitat types include permanent open water bodies, estuarine waters, intertidal sand/mud flats, mangrove forest/shrubland, saltmarsh, open forest, woodland, sedgelands and heathland. Mangroves, intertidal flats and saltmarsh are the dominant communities in the Noosa River estuary, including islands and adjacent lakes. Fringing communities of mangrove forest/shrubland and/or swamp she-oak (*Casuarina glauca*) forest occur along the river and lake edges, to the limit of tidal influence. Mixed high to tall open forest/woodland communities occur along creek/river banks throughout the site (pink bloodwood (*Corymbia intermedia*), broad-leaved white mahogany (*Eucalyptus umbra*), *E. tereticornis*, black sheoak

Wetland	Key Features
	(*Allocasuarina littoralis*), coastal cypress (*Callitris columellaris*), swamp paperbark (*Melaleuca quinquenervia*) and swamp box (*Lophostemon suaveolens*). Seasonally and permanently waterlogged areas generally support tall woodlands dominated by swamp paperbark, with *Eucalyptus* spp., swamp box and swamp she-oak, and with or without shrub and ground layers of heath, grasses, sedges and restiads. Permanently saturated areas (e.g. freshwater lake margins) also support sedgelands. Common species including *Lepironia articulata*, soft twigrush (*Baumea rubiginosa*), *Baloskion pallens*, pithy swordsedge (*Lepidosperma longitudinale*) and sword grass (*Gahnia sieberiana*). Areas of low closed heathland occur on sand lenses within the drainage lines. ***Significance*** The Noosa River lakes and adjacent wetlands are one of few such wetland complexes on the Australian east coast. ***Social and Cultural values*** This site is a highly valued area for tourism and recreation; education is also a significant use (e.g. many school groups use facilities at Lake Cootharaba for geography and science field trips); rapidly increasing urban and tourism development due to the natural values of the area; invaluable area for research into unique flora, fauna and landscape processes; and highly significant to Aboriginal people with numerous archaeological sites. Reference *Department of the Environment and Energy. 2017. Noosa River Wetlands - QLD135, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD135**.*
North Stradbroke Island	***Site description*** North Stradbroke Island is a sand island anchored by sedimentary and volcanic rocky headlands developed in the Mesozoic and Palaeozoic period ***Physical features*** The island has been built by periodic ocean rise during the Quaternary. These transgressions move sand to the island and initiate dune formation. Most dune building occurred in the Pleistocene, with different periods of formation producing mosaics of dunes of different sizes and shapes. Dune patterns, elevation, and the distribution of peat and estuarine clay control wetland formation. The western marine flats form a tidal delta for southern Moreton Bay. In the Holocene, beach ridge formations have developed a large freshwater lagoon at the foothills of the eastern parabolic dunes. The lagoon (18 Mile Lagoon) includes approximately 3,000 ha of swamp and creekline. Acid peats and humic podzols (with organic pans) have developed in this type of environment. The wetlands are surrounded by fast draining siliceous sands. Marine flats have developed gleyed duplex soils. ***Ecological features*** Evapotranspiration accounts for 750–1,000 mm of water loss each year. Runoff quantities are less than 500 mm per annum, because soil-water and groundwater recharge captures most surface water. Recharge occurs through direct infiltration to an 'unconfined' aquifer. Surface water is retained in perched or groundwater swamps and lakes. Stream flow is mostly lateral discharge from the island's sand aquifers. The mapped area that is near-permanently waterlogged or inundated exceeds 5,300 ha including tidal flats and estuaries. During seasonally wet periods, the wetland area expands to at least 6,300 ha. Water depth in swamps is usually less than 1.5 m, but depths greater than 6 m occur in lakes (e.g. Blue and Brown Lake). Water quality is very good. Water is often tannin stained but turbidity is low, nitrogen levels are low, salinity is low and chlorophyll-a levels are low. Water pH is generally between 4 and 5. The primary function of the wetlands is for recharge, flood detention, discharge (lateral seepage holds saline water from groundwater), and supply of clean water to lagoons, swamps and lakes.

Wetland	Key Features
	Significance North Stradbroke Island wetlands are significant because they provide some of the best and largest representatives of southern sandy island wetlands, they include a diversity of wildlife in natural conditions and provide refuge habitat to wildlife including migratory species. The wetlands provide substantial cultural and historical value to indigenous people, for European settlers and because of the significant role they have provided for research and education. Remnant ecosystems are large and well connected. Mosaics of remnants vary from 10s to 1000s of hectares in extent and have a high level of integrity. The Queensland Herbarium has identified 23 low-lying coastal wetland habitats in the mapped area. All of the mosaics are considered to have State significance. Some of the southern and north western open tidal and estuarine areas are included in designated fish habitat area. These areas contain more than 200 ha of designated fish habitat area within the mapped wetland. Migratory waders use numerous small bays and flats for feeding and roosting (about 120 ha in the mapped wetland area), and these sites connect with extensive Moreton Bay general wader habitat. The majority of fresh and saline wetlands are included in the Moreton Bay Ramsar area. Contemporary disturbance to remnant patches includes fire and weeds (*Lantana camara* and *Baccharis halimifolia*), clearing and water use for sand mining. ***Social and Cultural values*** A number of historical and indigenous sites are listed by the Register of the National Estate. These include natural values of the central and southern sections of the island, Blue Lake National Park, the Dunwich Cemetery, Southern and Eastern Moreton Bay, and places of indigenous value at Point Lookout and Dunwich. The sea caves and cliffs of the island have regional geohistorical value. The area is visited by birdwatchers and naturalist groups, to survey birds, especially migratory waders, and to observe dugong and whales. Universities from Brisbane have an established history and tradition of zoological, ecological, coastal geomorphology and oceanographic research from the island. The island's estuaries and harbours provide frequently used recreational boating and fishing facilities and resources. The North Stradbroke Island wetlands were a critical part of the traditional indigenous hunter-gather economy. The significance of wetlands to the traditional Aboriginal lifestyle of the North Stradbroke Island people is substantial. The *Blechnum indicum* fern was the predominant vegetable staple food, while swamp yam species such as *Ipomea* and *Typha* species, and wild fruits and berries appear to have also played a food role. The swamps, swamp margins and their ecotones harboured the majority of plant species used in, and essential to, the traditional economy. These include blueberry ash (fish poison); foods such as midgim and pig face; paperbark for housing, shelter, packaging and fish storage; cottonbush and native hibiscus for cordage, twine and hunting and fishing nets; bark and trees for canoes and housing; timber and wood for spears, boomerangs and tools; and reeds and boronia for basketry. The Eighteen Mile Swamp provided no constraints to movement of resources, and the western margin was also used for traditional rites of passage initiation ceremony associated with a large bora ring associated located on the southern end of the island near Swan Bay. The west coast sites contain little evidence of the cross-island transport of food and other resources. Traditional occupation to the south of Dunwich appears to have been more low-key with family-sized occupation sites, often targeting premium local resources such as hairy mussel, oyster and quampie. European historic values include the use of Dunwich and Amity Point (areas with close access to Flinders and Myora swamps and springs) for early penal settlements until 1839. An initial survey of the island and contact with Aboriginals occurred in 1803 with an expedition led by Matthew Flinders. At that stage more than 300 indigenous people inhabited the island in permanent camps. Amity Point in the 1820s was used as a harbour and transfer point for goods dispatched to Brisbane.

Wetland	Key Features
	This activity was soon shifted to Dunwich. A Catholic mission for Aborigines was established at Dunwich in 1843. From 1850 to 1947 Dunwich played a Quarantine and 'Benevolent Asylum' role. Six large shipwrecks have occurred around the island. The historic cement and timber Point Lookout Light House was built in 1932 to reduce the number of shipping accidents. The island has an established history in the fishery industry, particularly from the 1940s. The most recent profitable and heavy industry to commence on the island is mineral sand mining (for ilmenite, rutile and zircon), which began in 1950. Much of the island's infrastructure was built with the initiation of mining activities. The area is now better known for its tourism and urban lifestyle. Reference *Department of the Environment and Energy. 2017. North Stradbroke Island - QLD191, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD191**.*
Northeast Curtis Island	***Site description*** The site is the northeastern side of Curtis Island, between Cape Keppel and Cape Capricorn, incorporating the extensive marine plain south of Yellow Patch inlet, and also Rundle Island. It is a shallow embayment some 20 km long, with small rocky headlands at each end; bay and estuary fringed largely by mangroves, behind which there is a 4,000-ha marine plain, which is tending to the southern limit of such habitat. ***Physical features*** Shallow embayment and small estuaries; offshore islands and sand bars; small rocky headlands; coastal lowlands; parabolic dune system and exposed sandmass. Geology dominated by estuarine deposits of the Holocene epoch; tidal delta sands of the same age at the mouth of Yellow Patch Inlet and in the sandbar offshore from it; Holocene high dune system occur along the southeastern boundary of the site (coastline running up to Cape Capricorn); Capes Capricorn and Keppel are formed on the Shoalwater and Wandilla formations respectively (Devonian); minor areas of Eocene colluvium occurs between the estuarine deposits and the Ramsay Range (Wandilla Formation). ***Ecological features*** Mangrove forest and shrubland forms an extensive fringing community along the estuaries and protected coastline of the bay; distinct banding occurs from seaward to land - Avicennia fringe on the seaward margin through a Rhizophora zone (main zone) a Ceriops zone on coastal saltflat to Ceriops fringe (between a saltflat and terrestrial vegetation). The most prominent feature of this wetland site is the vast (4,000 ha) marine plain, which represents the southern limit of this habitat type; the marine plain supports swampy or mixed grassland, dominated by green couch (*Cynodon dactylon*), *Paspalum* sp. and *Digitaria* sp., often in pure swards. The area supports a variety of flora and fauna, both terrestrial and marine, some of which are threatened species. ***Significance*** The extent of the marine plain, at the southern limit of the habitat type, the presence of threatened fauna, migratory waders, notable landscape features and the overall near natural condition of the area in general combine to make this site a highly significant wetland at the regional, state and national levels. ***Social and Cultural values*** A number of Aboriginal shell middens occur in the area. There is an historic lighthouse at Cape Capricorn which is listed on the Queensland Heritage Register. The site comprises an important grazing resource for leaseholders and has significant tourism/recreation values (e.g. estuarine boating and fishing, sightseeing). There is a popular and spectacular mooring site in Yellow Patch Inlet, and Yellow Patch sand blow is a significant landscape feature. Reference *Department of the Environment and Energy. 2017. Northeast Curtis Island - QLD017, in Australian Wetlands Database. Department of the Environment and Energy,*

Wetland	Key Features
	Canberra. Available from: ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD017***
Pine River and Hays Inlet	**Site description** (No data) **Physical features** The Lower Pine River and Hays Inlet area is an estuarine delta at the northern limit of Brisbane City. Pine River, Fresh Water and Hays creeks discharge into the delta. Hays Creek forms Hays Inlet, a shallow linear inlet with extensive tidal flats. The genesis of the inlet and lower Pine River has defined the delta. The inlet is bounded by Tertiary ferricrete with outcrops of Tertiary basalt on Redcliffe Peninsula in the east, and Triassic-Jurassic sandstones and shales in Mango Hill to the west. The majority of the delta and inlet is formed from Holocene and Pleistocene sand and mud. Northern and western areas on sandstone, colluvium and palaeosol have formed clayey humic gley soils with poor drainage and ironstone nodules. Eastern parts of the delta include krasnozem soils. The majority of supratidal flats and meadows have gleyed podzolic or soloth duplex soils with poor drainage and frequent waterlogging. Soils in southern and south-western reaches include humic gleys formed in depressions and old tidal channels with high water tables. Acid sulfate soil deposits are known or expected to occur in almost all wetland areas. **Ecological features** Vegetation in the wetland is dominated by mangrove shrublands and forests, saltmarshes and claypans, mixed Eucalyptus forest, Melaleuca forest, Casuarina open forest and sedge swamps on old pasture. Mangrove communities include grey mangrove (Avicennia marina) closed forests and shrublands, with river mangrove (Aegiceras corniculatum), large-fruited orange mangrove (Bruguiera gymnorhiza), yellow mangrove (Ceriops tagal), spotted mangrove (Rhizophora stylosa), milky mangrove (Exoecaria agallocha) and black mangrove (Lumnitzera racemosa). Low open Ceriops shrubland are a common feature in the high tidal zone. Intertidal saltmarshes include sand couch (Sporobolus virginicus) grassland, samphire communities, claypans and algal mats. Mixed Eucalyptus forests and woodland include E. tereticornis, Moreton Bay ash (E. tessellaris), grey ironbark (E. drepanophylla), swamp she-oak (Casuarina glauca), white bottlebrush (Callistemon salignus), swamp paperbark (M. quinquenervia), Cupaniopsis anarcardioides, Ficus platypoda, Brachychiton populneus, broad-leaved leopard tree (Flindersia collina) and cotton tree (Hibiscus tiliaceus). Forests of M. quinquenervia occur as small remnants in the south but more extensive forests occur around Hays Inlet. Casuarina glauca with S. virginicus occur on estuarine verges. Sedge swamps include broad-leaved cumbungi (Typha orientalis), common reed (Phragmites australis), Eleocharis species, Lepironia articulata, and frogsmouth (Philydrum lanuginosum). Minor scrub remnants occur with epiphytes (Asplenium australiasicum), glossy acronychia (Acronychia laevis), and crow's ash (Flindersia australis). **Significance** The Pine River and Hays Inlet wetland is significant because of its value to wildlife, especially migratory waders, and because of the facilities provided for wildlife education and research. The Queensland Herbarium has classified the extensive tidal wetlands and low-lying freshwater wetland vegetation into 46 vegetation mosaics of tens of hectares. Twenty-three mosaics have been identified with State significance, seven mosaics have regional significance, and 16 mosaics have local significance. A large area of the tidal zone, about 1,350 ha, is conserved for fish habitat, because of its value to fish and crustacean spawning and feeding. The area is critical to migratory waders. Seven areas of approximately 110 ha, as well as habitat mapped with the greater Moreton Bay area, provide essential wader roosting and feeding areas. The majority of the mapped wetland is included in the Moreton Bay Ramsar area because of its wader and fisheries significance. Significant weeds occur in the wetland, including Cyperus papyrus, Eichhornia crassipes, Protasparagus

Wetland	Key Features
	species, Chloris gayana, Baccharis halimifolia, and Lantana camara. These threats combined with pollution, littering and fire reduce the integrity and value of many habitats. **Social and Cultural values** The area is recognized regionally and nationally for its value to migratory waders. Thousands of visitors visit the wetland reserves (e.g. the Tinchi Tamba environmental park) to survey and observe the birds. Bird observer groups monitor the site annually and periodically to survey bird numbers. Bird hides and educational materials are provided in the Tinchi Tamba reserve. The area is recognized as a significant fishery, attracting tourists, boat and fishing enthusiasts from the Brisbane area. Indigenous values include middens, scarred trees and the use of the area for a burial area. Evidence of historic corduroy tracks and soldier settlements have been identified. One of these soldier settlement blocks was one of only two given to returned indigenous WW1soldiers. The formal use of the area for recreation dates back to 1929 when a caretaker's cottage and kiosk was built. Public parks and picnic areas are regularly used. Swimming, photography and nature appreciation are activities encouraged within the reserves and conservation areas. The Tinchi Tamba reserve is used by local school and TAFE colleges for educational purposes. Reference Department of the Environment and Energy. 2017. Pine River and Hays Inlet - QLD190, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD190** .
Port Curtis	***Site description*** The site includes all tidal areas in the vicinity of Gladstone, from a line between Laird Point and Friend Point (southern end of The Narrows), to a line between Gatcombe Head and Canoe Point, including the seaward side of Facing Island and Sable Chief Rocks, and southern Curtis Island west of a line between North Point and Connor Bluff. ***Physical features*** Partially enclosed embayment and shallow estuaries, including small, continental rocky islands, intertidal flats and estuarine islands. The geology consists of two main groups - Holocene estuarine deposits (lowlands), and Wandilla and Shoalwater Formations; both Devonian (islands and coastal hills), plus relatively smaller areas of Holocene tidal delta sands and beach ridges near the mouth of the Boyne River, and Pleistocene alluvium, associated with the Boyne and Calliope rivers. ***Ecological features*** There are extensive mangrove forests and shrublands (3,300 ha), seagrass beds (2,430 ha) and saltflats (2,800 ha). Mangroves exhibit distinct banding from seaward to land - Avicennia fringe on seaward margin through a Rhizophora zone (main zone) a Ceriops zone on coastal saltflat to a Ceriops fringe (between saltflat and terrestrial vegetation). Seagrasses are generally intertidal due to the natural turbidity of the waters - most abundant species is *Zostera capricornia*, with *Halophila ovalis* and *Halodule uninervis* also common. Coastal saltflats are mostly bare claypan, with lesser areas ranging from low/dwarf open halophytic shrubland (e.g. *Sarcocornia* sp. and *Suaeda* spp.), to open and closed grasslands dominated by sand couch (*Sporobolus virginicus*). ***Significance*** (No data) ***Social and Cultural values*** Several sites of high archaeological significance occur on Facing Island, and a number of shipwrecks are also found along the coast. Gladstone Harbour is the major port of central Queensland - 20% of Queensland's and 5% of Australia's export revenue is earned through this port. The area provides an important access to the Great Barrier Reef and has a developing tourism industry; the harbour facilities and other infrastructure in Gladstone continue to provide initiative for major ongoing industrial development.

Wetland	Key Features
	Reference *Department of the Environment and Energy. 2017. Port Curtis - QLD019, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD019***
Pumicestone Passage	***Site description*** Several creek systems drain into Pumicestone Passage at the northern extent of Moreton Bay. The direct access of these creeks to the sea is blocked by the barrier island, Bribie Island. This gives rise to a narrow, shallow passage which has limited water exchange with the ocean. The build-up of silt carried down by these creeks has formed vast tidal flats, providing feeding areas for waders. Seagrass meadows occur throughout the site. The adjacent national park on Bribie Island is fringed by mangroves backed by melaleuca swamps. ***Physical features*** General geology: the regional geology of the catchment area of Pumicestone Passage consists of a variety of volcanic and sedimentary rocks and associated unconsolidated sediments. The western boundary of the catchment is defined by the coastal ranges, consisting of sandstone, siltstone, shale, conglomerate, ironstone and coal of the Landsborough Sandstone. Along the coastal plain, the Landsborough Sandstone is the main sedimentary formation while Quaternary alluvium and coastal deposits are associated with streams issuing into Pumicestone Passage and along the western shores of that feature. Acid volcanic plugs, forming the Glasshouse Mountains, intrude into the sandstone unit. Bribie Island, which forms the eastern side of Pumicestone Passage, is built of Holocene dunes, tidal deltas, flats overlying Pleistocene sand ridges and estuarine deposits. It has no comparable major aeolian landforms such as those exhibited by the other barrier islands (Moreton, North Stradbroke and South Stradbroke) which form the eastern edge of Moreton Bay. ***Ecological features*** Four wetland habitats occur within the site, or adjacent to it: (i) shallow estuarine water systems including seagrass beds; (ii) lower intertidal mudflats; (iii) mangrove communities; and (iv) supratidal flats. ***Significance*** (No data): ***Social and Cultural values*** The site is important as a recreational area (e.g. swimming, fishing). Reference *Department of the Environment and Energy. 2017. Pumicestone Passage - QLD136, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from:* ***http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD136*** .
The Narrows	***Site description*** The site is the passage between Curtis Island and the mainland, including the tidal wetlands on northwestern Curtis Island, and Graham Creek east of Deception Creek. ***Physical features*** Passage landform between mainland and continental island; supra and intertidal flats and estuary landforms; predominantly recent and Quaternary alluvial and marine deposits of silt, clay and sand. Significant oil shale deposits are found below the more recent sediments. ***Ecological features*** Habitat types include: (i) saline coastal flats; (ii) mangrove forests; (iii) intertidal sand and mud flats; (iv) seagrass beds and (v) open marine and estuarine waters. ***Significance*** The Narrows is a unusual landform feature, being one of only four tidal passages in Australia.

Wetland	Key Features
	Social and Cultural values Several registered sites of Aboriginal significance occur along The Narrows; a major commercial and recreational fishing and crabbing area; important waterway (at high tide) for boats moving up and down the coast. Reference *Department of the Environment and Energy. 2017. The Narrows - QLD021, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: **http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD021**.*
Upper Pumicestone Coastal Plain	***Site description*** The upper Pumicestone coastal and subcoastal plain includes the sub catchments of Bells, Lamerough, Halls, Bluegum, Mellum, Coochin, Coonorwin and Hussey creeks. ***Physical features*** The creeks are interrupted by depressions and swamps with hummock microrelief. Most water is shed from very low ridges of sandstone and lateritic residue. The creeks drain through tidal deltas to Pumicestone Passage. The creeks have low flow capacities and floodplain development is minimal. The geology is dominated by shale and sandstone from the Triassic-Jurassic period. The lowest plains are derived from tidal sands and muds. Soils include lateritic podzols, gleyed podzolics, humic gleys and groundwater podzols. The groundwater podzols are humus rich and have an organic pan. The podzolic gleyed soils are silt and clay rich and are found in depressions subject to frequent inundation and anoxia. The humic gleys also occur in frequently inundated areas but are sandier and include perched water tables. Large areas with peat and peaty sands occur. The wetlands include hundreds of hectares of acid sulfate deposits. ***Ecological features*** Feature wetland communities include Melaleuca forested wetlands with swamp water fern (*Blechnum indicum*) and broad-leaved banksia (*Banksia robur*), fringing riparian swamp paperbark (*M. quinquenervia*) and black sheoak (*Allocasuarina littoralis*) with *Hypolepis, Lepironia, Lygodium, Rhynchospora* and *Cyperus* species, *M. quinquenervia* wet heaths with *Banksia, Leptospermum, Callistemon* and *Ghania* species, sedgelands with *Lepironia articulata, Cyperus, Ghania, Baumea, Schoenus, Leersia* and *Philydrum* species, gallery myrtaceous forests in the supratidal zone (scribbly gum (*Eucalyptus racemosa*) and *M. quinquenervia*), notophyll vine forest, open and closed proteaceous wet heath with swamp stringybark (*E. conglomerata*), Bancroft's red gum (*Eucalyptus bancroftii*), swamp box (*Lophostemon suaveolens*), Syncarpia glomulifera, tinywattle (*Acacia attenuata*), broad-leaved tea-tree (*M. leucadendra*), *Epacris, Lomandra, Baeckia* and *Banksia* species, scribbly gum (*E. racemosa*) and blackbutt (*E. pilularis*) forest, intertidal meadows and pans with sand couch (*Sporobolus virginicus*) and swamp she-oak (*Casuarina glauca*), and mangrove shrublands and forests with *Avicennia, Aegiceris, Ceriops, Rhizophora*, and *Bruguiera* species. ***Significance*** The Upper Pumicestone Coastal Plain wetlands are significant because they contain some of the last remnants of wallum and intertidal wetland from the once extensive wetlands of the northern Caboolture plain. These remnants are good representatives because they have been conserved from development and for research. The area hosts a very large number of wildlife species, including migratory species, and provides refuge habitat for wildlife. The area has high cultural significance to Indigenous peoples and for research and education purposes. ***Social and Cultural values*** Several features in the area are listed in the Register of the National Estate. These include Pumicestone Passage and places of Indigenous value (e.g. bora and kippa rings, and fish traps occur in the area). The Pumicestone plain contains numerous sites of artefact scatters, scarred trees, middens and camps. The wetlands in this area provided an abundance of food (e.g. fish, crayfish, shellfish and vegetable matter) for Indigenous peoples. The area has an historic timber harvesting

Wetland	Key Features
	record, and a collection of Jinker logs and stumps cut using springboards are located in the area. The mapped area includes four scientific areas with a combined area of 800 ha. These areas were conserved from logging and wildfires to provide ecological reference sites to illustrate coastal wallum conditions prior to logging, and to enable the evaluation of soil types and the evolution of habitats. Habitat evolution research included analysis of fire frequency effects on wallum community diversity and viability. Local conservation and naturalist groups and QPWS survey these areas periodically and encourage community involvement. Universities also contribute to research. These areas are managed with risk management plans. The scientific areas have been established for 26 to 75 years, and their biological and ecological characteristics and dynamics have been extensively researched during that period of time. Large numbers of naturalists visit Pumicestone Passage for bird surveys because the area hosts large numbers of migratory waders. The passage is popular for boating activities, particularly recreational fishermen, and attracts tourists from across the region for this purpose. Reference *Department of the Environment and Energy. 2017. Upper Pumicestone Coastal Plain - QLD188, in Australian Wetlands Database. Department of the Environment and Energy, Canberra. Available from: http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW;doiw_refcodelist=QLD188.*

Appendix 3 - EPBC Protected Matters Search Reports

Environmental Sectors:

- Otway
- Bass Strait
- Gippsland
- Sorell
- SE Tasmania
- Central
- NSW
- SE Queensland
- Lord Howe
- Norfolk Island

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: 15-Jul-2025

[Summary](#)
[Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)
[Acknowledgements](#)

Figure: Otway Environmental Sector

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:	1
Wetlands of International Importance (Ramsar	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	11
Listed Threatened Species:	145
Listed Migratory Species:	74

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:	29
Commonwealth Heritage Places:	1
Listed Marine Species:	129
Whales and Other Cetaceans:	32
Critical Habitats:	1
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	11
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:	124
Regional Forest Agreements:	2
Nationally Important Wetlands:	17
EPBC Act Referrals:	145
Key Ecological Features (Marine):	2
Biologically Important Areas:	30
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Glenelg estuary and discovery bay wetlands	Within Ramsar site
Lavinia	10 - 20km upstream from Ramsar site
Piccaninnie ponds karst wetlands	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)
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
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered	Community known to occur within area

Community Name	Threatened Category	Presence Text
Karst springs and associated alkaline fens of the Naracoorte Coastal Plain Bioregion	Endangered	Community likely to occur within area
King Island scrub complex	Endangered	Community likely to occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community may occur within area
Natural Temperate Grassland of the Victorian Volcanic Plain	Critically Endangered	Community may occur within area
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)	Critically Endangered	Community likely to occur within area
Tasmanian white gum (Eucalyptus viminalis) wet forest	Critically Endangered	Community likely to 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		
Acanthiza pusilla magnirostris		
King Island Brown Thornbill, Brown Thornbill (King Island) [91709]	Endangered	Species or species habitat known to occur within area
Acanthornis magna greeniana		
King Island Scrubtit, Scrubtit (King Island) [82329]	Critically Endangered	Species or species habitat known to occur within area
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat may occur within area
Aphelocephala leucopsis		
Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Aquila audax fleayi Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Breeding likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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
Calyptorhynchus banksii graptogyne South-eastern Red-tailed Black-Cockatoo [25982]	Endangered	Foraging, feeding or related behaviour known to occur within area
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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
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
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

Scientific Name	Threatened Category	Presence Text
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Roosting known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely 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	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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	Migration route known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Platycercus caledonicus brownii Green Rosella (King Island) [67041]	Vulnerable	Species or species habitat known 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
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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
Strepera fuliginosa colei Black Currawong (King Island) [67113]	Vulnerable	Breeding likely 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 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
Tyto novaehollandiae castanops (Tasmanian population)		
Masked Owl (Tasmanian) [67051]	Vulnerable	Species or species habitat known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area
CRUSTACEAN		
Astacopsis gouldi		
Giant Freshwater Crayfish, Tasmanian Giant Freshwater Lobster [64415]	Vulnerable	Species or species habitat may occur within area
Euastacus bispinosus		
Glenelg Spiny Freshwater Crayfish, Pricklyback [81552]	Endangered	Species or species habitat known to occur within area
FISH		
Gadopsis sp. SWV		
Western Victorian Blackfish [90722]	Endangered	Species or species habitat likely to 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
Nannoperca obscura		
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Nannoperca variegata		
Variegated Pygmy Perch, Ewens Pygmy Perch, Golden Pygmy Perch [26178]	Vulnerable	Species or species habitat known 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 may occur within area
Seriolella brama		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
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
INSECT		
Oreisplanus munionga larana		
Marrawah Skipper, Alpine Sedge Skipper, Alpine Skipper [77747]	Vulnerable	Species or species habitat may occur within area
Synemon plana		
Golden Sun Moth [25234]	Vulnerable	Species or species habitat may 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 known to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known 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
Dasyurus maculatus maculatus (Tasmanian population)		
Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Breeding 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 known to occur within area
Miniopterus orianae bassanii		
Southern Bent-wing Bat [87645]	Critically Endangered	Breeding known to occur within area
Neophoca cinerea		
Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area
Perameles gunnii gunnii		
Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	Species or species habitat likely to occur within area
Petauroides volans		
Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys shortridgei		
Heath Mouse, Dayang, Heath Rat [77]	Endangered	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Sarcophilus harrisii		
Tasmanian Devil [299]	Endangered	Species or species habitat likely to occur within area
OTHER		
Hyridella glenelgensis		
Glenelg Freshwater Mussel [82953]	Critically Endangered	Species or species habitat may occur within area
PLANT		
Amphibromus fluitans		
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat known to occur within area
Astelia australiana		
Tall Astelia [10851]	Vulnerable	Species or species habitat may occur within area
Caladenia calcicola		
Limestone Spider-orchid [10065]	Vulnerable	Species or species habitat likely to occur within area
Caladenia colorata		
Coloured Spider-orchid, Small Western Spider-orchid, Painted Spider-orchid [54999]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area
Caladenia dienema Windswept Spider-orchid [64858]	Endangered	Species or species habitat may occur within area
Caladenia hastata Melblom's Spider-orchid [16118]	Endangered	Species or species habitat likely to occur within area
Caladenia ornata Ornate Pink Fingers [76213]	Vulnerable	Species or species habitat known to occur within area
Caladenia richardsiorum Little Dip Spider-orchid [55018]	Endangered	Species or species habitat likely to occur within area
Caladenia tensa Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat may occur within area
Diuris lanceolata Snake Orchid [10231]	Endangered	Species or species habitat known to occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus strzeleckii Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Hiya distans listed as Hypolepis distans Scrambling Ground-fern [92548]	Endangered	Species or species habitat known to occur within area
Ixodia achillaeoides subsp. arenicola Sand Ixodia, Ixodia [21474]	Vulnerable	Species or species habitat known to occur within area
Lepidium aschersonii Spiny Peppercress [10976]	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 known to occur within area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat may occur within area
Pomaderris halmaturina subsp. halmaturina Kangaroo Island Pomaderris [21964]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum atratum Three Hummock Leek-orchid [82677]	Critically Endangered	Species or species habitat may occur within area
Prasophyllum diversiflorum Gorae Leek-orchid [13210]	Endangered	Species or species habitat likely to occur within area
Prasophyllum favonium Western Leek-orchid [64949]	Critically Endangered	Species or species habitat may 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 litorale listed as Prasophyllum littorale Coastal Leek Orchid [55234]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Prasophyllum secutum Northern Leek-orchid [64954]	Endangered	Species or species habitat likely to occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum suaveolens Fragrant Leek-orchid [64956]	Endangered	Species or species habitat may occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat known to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area
Pterostylis ziegeleri Grassland Greenhood, Cape Portland Greenhood [64971]	Vulnerable	Species or species habitat may occur within area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known to occur within area
Taraxacum cygnorum Coast Dandelion, Native Dandelion [2508]	Vulnerable	Species or species habitat known to occur within area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Thelymitra matthewsii Spiral Sun-orchid [4168]	Endangered	Species or species habitat may occur within area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may 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
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known 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

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat known to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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 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

Scientific Name	Threatened Category	Presence Text
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
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding 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	Foraging, feeding or related behaviour known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding 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]		Foraging, feeding or related behaviour known to occur within area
Migratory Terrestrial Species		

Scientific Name	Threatened Category	Presence Text
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Roosting known to occur within area
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat known to occur within area
[Motacilla flava](#) Yellow Wagtail [644]		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
[Calidris ruficollis](#) Red-necked Stint [860]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
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
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
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Defence	
Defence - Training Depot, Darts RD 3305 Portland [21011]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21016]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21020]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21018]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21022]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21021]	VIC

Commonwealth Land Name	State
Defence - Training Depot, Darts RD 3305 Portland [21013]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21010]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21012]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21015]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21019]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21014]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21008]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21007]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21024]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21023]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21009]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21017]	VIC
Defence - WARRNAMBOOL TRAINING DEPOT [21111]	VIC
Transport and Regional Services - Australian Maritime Safety Authority	
Commonwealth Land - Australian Maritime Safety Authority [41215]	SA
Commonwealth Land - Australian Maritime Safety Authority [41263]	SA
Commonwealth Land - Australian Maritime Safety Authority [41289]	SA
Commonwealth Land - Australian Maritime Safety Authority [41288]	SA
Unknown	
Commonwealth Land - [60346]	TAS
Commonwealth Land - [21583]	VIC
Commonwealth Land - [21492]	VIC
Commonwealth Land - [60116]	TAS
Commonwealth Land - [60111]	TAS
Commonwealth Land - [60113]	TAS

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Historic		
Cape Northumberland Lighthouse	SA	Listed place

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat known to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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
Calidris alba Sanderling [875]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat 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
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
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

Scientific Name	Threatened Category	Presence Text
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	Roosting known to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area
Larus pacificus Pacific Gull [811]		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	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area
[Morus capensis](#) Cape Gannet [59569]		Breeding known to occur within area
[Morus serrator](#) Australasian Gannet [1020]		Breeding known to occur within area
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat known to occur within area overfly marine area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Breeding known to occur within area overfly marine area
[Neophema chrysogaster](#) Orange-bellied Parrot [747]	Critically Endangered	Migration route 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

Scientific Name	Threatened Category	Presence Text
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding known to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding known to occur within area
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
Pelecanoides urinatrix Common Diving-Petrel [1018]		Breeding known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		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 macroptera Great-winged Petrel [1035]		Foraging, feeding or related behaviour known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 known to occur within area overfly marine 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
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area
Thalassarche 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

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
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
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		
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area
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 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 mollisoni Mollison's Pipefish [66260]		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

Scientific Name	Threatened Category	Presence Text
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
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
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

Scientific Name	Threatened Category	Presence Text
[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
[Vanacampus vercoi](#) Verco's Pipefish [66286]		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
[Neophoca cinerea](#) Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area
Reptile		
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding 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	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

Current Scientific Name	Status	Type of Presence
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known 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	Breeding 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

Current Scientific Name	Status	Type of Presence
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Hyperoodon planifrons Southern Bottlenose Whale [71]		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
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

Current Scientific Name	Status	Type of Presence
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]		Foraging, feeding or related behaviour known to occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops 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

Critical Habitats [Resource Information]

Name	Type of Presence
Thalassarche cauta (Shy Albatross) - Albatross Island, The Mewstone, Pedra Branca	Listed Critical Habitat

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Murray	Habitat Protection Zone (IUCN IV)

Park Name	Zone & IUCN Categories
Murray	Habitat Protection Zone (IUCN IV)
Apollo	Multiple Use Zone (IUCN VI)
Franklin	Multiple Use Zone (IUCN VI)
Murray	Multiple Use Zone (IUCN VI)
Zeehan	Multiple Use Zone (IUCN VI)
Franklin	National Park Zone (IUCN II)
Murray	National Park Zone (IUCN II)
Nelson	National Park Zone (IUCN II)
Zeehan	National Park Zone (IUCN II)
Zeehan	Special Purpose Zone (IUCN VI)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Aire River	Heritage River	VIC
Aire River W.R.	Natural Features Reserve	VIC
Badger Box Creek	Nature Reserve	TAS
Barham Paradise S.R.	Natural Features Reserve	VIC
Bats Ridge W.R	Nature Conservation Reserve	VIC
Baudin Rocks	Conservation Park	SA
Bay of Islands Coastal Park	Conservation Park	VIC
Beachport	Conservation Park	SA
Bernouilli	Conservation Reserve	SA
Bird Island	Game Reserve	TAS
Black Pyramid Rock	Nature Reserve	TAS
Bolwarra H43 B.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Bolwarra H44 B.R.	Natural Features Reserve	VIC
Bolwarra H45 B.R.	Natural Features Reserve	VIC
Bucks Lake	Game Reserve	SA
Canunda	National Park	SA
Cape Nelson	State Park	VIC
Carpenter Rocks	Conservation Park	SA
Cataraqui Point	Conservation Area	TAS
Christmas Island	Nature Reserve	TAS
Colliers Forest Reserve	Conservation Covenant	TAS
Colliers Swamp	Conservation Area	TAS
Currie Lightkeepers Residence	Historic Site	TAS
Dingley Dell	Conservation Park	SA
Discovery Bay	Marine National Park	VIC
Discovery Bay Coastal Park	Conservation Park	VIC
Douglas Point	Conservation Park	SA
Dry Creek	Forest Reserve	SA
Ewens Ponds	Conservation Park	SA
Glenelg River	Heritage River	VIC
Goose Lagoon W.R	Natural Features Reserve	VIC
Gorae B.R.	Natural Features Reserve	VIC
Great Otway	National Park	VIC
Guichen Bay	Conservation Park	SA
Harbour Islets	Conservation Area	TAS
Hedditch Hill S.R.	Natural Features Reserve	VIC
Henderson Islets	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Hunter Island	Conservation Area	TAS
Johanna Falls S.R.	Natural Features Reserve	VIC
Johnstones Creek F.R	Nature Conservation Reserve	VIC
Kangaroo Island	Conservation Area	TAS
Kentbruck H14 B.R	Natural Features Reserve	VIC
Kentbruck H50 B.R.	Natural Features Reserve	VIC
King Island - southern titles Area 1	Conservation Covenant	TAS
Lady Julia Percy Island W.R.	Nature Conservation Reserve	VIC
Lake Aringa W.R	Nature Conservation Reserve	VIC
Lake Frome	Conservation Park	SA
Lake Gillear W.R	Natural Features Reserve	VIC
Lake Robe	Game Reserve	SA
Lake St Clair	Conservation Park	SA
Latrobe B.R.	Natural Features Reserve	VIC
Lawrence Rocks W.R.	Nature Conservation Reserve	VIC
Little Dip	Conservation Park	SA
Little Trefoil	Conservation Area	TAS
Lower Glenelg	National Park	VIC
Lower Glenelg River	Conservation Park	SA
Lower South East	Marine Park	SA
Marengo N.C.R.	Nature Conservation Reserve	VIC
Marengo Reefs	Marine Sanctuary	VIC
Merri	Marine Sanctuary	VIC

Protected Area Name	Reserve Type	State
Mount Richmond	National Park	VIC
Mouzie B.R	Natural Features Reserve	VIC
Mouzie N.F.R	Natural Features Reserve	VIC
Mullins Swamp	Conservation Park	SA
Murkay Islets	Conservation Area	TAS
Nares Rocks	Conservation Area	TAS
Narrawong F.R.	Nature Conservation Reserve	VIC
Nelson SS.R.	Natural Features Reserve	VIC
Nene Valley	Conservation Park	SA
New Year Island	Game Reserve	TAS
Parker River	Reference Area	VIC
Penguin Island	Conservation Park	SA
Penguin Islet	Nature Reserve	TAS
Petrel Islands	Game Reserve	TAS
Piccaninnie Ponds	Conservation Park	SA
Porky Beach	Conservation Area	TAS
Port Campbell	National Park	VIC
Portland H46 B.R.	Natural Features Reserve	VIC
Portland H47 B.R.	Natural Features Reserve	VIC
Princetown W.R	Natural Features Reserve	VIC
Red Hut Point	Conservation Area	TAS
Red Hut Road #1	Conservation Covenant	TAS
Red Hut Road #2	Conservation Covenant	TAS
Reid Rocks	Nature Reserve	TAS

Protected Area Name	Reserve Type	State
Seacrow Islet	Conservation Area	TAS
Seal Rocks	Conservation Area	TAS
Seal Rocks	State Reserve	TAS
Shell Islets	Conservation Area	TAS
South Rd Nugara	Conservation Covenant	TAS
Stack Island	Game Reserve	TAS
Stokes Point	Conservation Area	TAS
Stony Creek (Otways)	Reference Area	VIC
The Arches	Marine Sanctuary	VIC
The Doughboys	Nature Reserve	TAS
Three Hummock Island	State Reserve	TAS
Tower Hill W.R	Natural Features Reserve	VIC
Trewalla H48 B.R.	Natural Features Reserve	VIC
Trewalla H49 B.R.	Natural Features Reserve	VIC
Twelve Apostles	Marine National Park	VIC
Tyrendarra F.R	Nature Conservation Reserve	VIC
Unnamed (No.HA1038)	Heritage Agreement	SA
Unnamed (No.HA108)	Heritage Agreement	SA
Unnamed (No.HA1166)	Heritage Agreement	SA
Unnamed (No.HA1361)	Heritage Agreement	SA
Unnamed (No.HA1404)	Heritage Agreement	SA
Unnamed (No.HA1457)	Heritage Agreement	SA
Unnamed (No.HA1560)	Heritage Agreement	SA
Unnamed (No.HA1571)	Heritage Agreement	SA
Unnamed (No.HA1626)	Heritage Agreement	SA

Protected Area Name	Reserve Type	State
Unnamed (No.HA177)	Heritage Agreement	SA
Unnamed (No.HA197)	Heritage Agreement	SA
Unnamed (No.HA245)	Heritage Agreement	SA
Unnamed (No.HA26)	Heritage Agreement	SA
Unnamed (No.HA354)	Heritage Agreement	SA
Unnamed (No.HA42)	Heritage Agreement	SA
Unnamed (No.HA497)	Heritage Agreement	SA
Unnamed P0176	Private Nature Reserve	VIC
Upper South East	Marine Park	SA
Wicks Road Nugara	Conservation Covenant	TAS
Wild Dog B.R.	Natural Features Reserve	VIC
Wild Dog Creek SS.R.	Natural Features Reserve	VIC
Wongarra B.R.	Natural Features Reserve	VIC
Yambuk F.F.R.	Nature Conservation Reserve	VIC
Yambuk Wetlands N.C.R.	Natural Features 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
Tasmania RFA	Tasmania
West Victoria RFA	Victoria

Nationally Important Wetlands

[Resource Information]

Wetland Name	State
Aire River	VIC
Ewens Ponds	SA
Glenelg Estuary	VIC

Wetland Name	State
Glenelg River	VIC
Lake Frome & Mullins Swamp	SA
Long Swamp	VIC
Lower Aire River Wetlands	VIC
Lower Merri River Wetlands	VIC
Pearshape Lagoon 1	TAS
Pearshape Lagoon 2	TAS
Pearshape Lagoon 3	TAS
Pearshape Lagoon 4	TAS
Piccaninnie Ponds	SA
Princetown Wetlands	VIC
South East Coastal Salt Lakes	SA
Tower Hill	VIC
Yambuk Wetlands	VIC

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Apollo Bay to Skenes Creek Coastal Trail	2022/09274		Assessment
Cape Winds Offshore Windfarm Geophysical, Geotechnical and Marine Studies	2023/09629		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters	2024/09879		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters ? May 2025	2025/10138		Referral Decision
Geographe-A gas exploration well	2000/82		Completed
Hydrocarbon exploration wells	2003/1062		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Nora Creina integrated golf course and tourism development, SA	2014/7249		Assessment
Normanville Energy Park	2024/10070		Assessment
Otway Astrolabe 3D Marine Seismic Survey, Otway Basin	2012/6421		Completed
Portland Energy Park	2024/09947		Assessment
Robbins Island Renewable Energy Park, Robbins Island, Tasmania	2017/8096		Approval
SA Offshore Windfarm	2021/9028		Completed
SEA Gas Project transmission pipeline	2001/513		Completed
SMAP telecommunications submarine cable installation	2024/09989		Completed
Southern Winds Offshore Wind Project	2022/09435		Completed
Southern Winds Offshore Wind Project Initial Marine Field Investigations	2022/09436		Completed
Spinifex Offshore Surveys	2022/09359		Completed
Spinifex Offshore Wind Farm - Offshore Investigations	2024/09918		Referral Decision
Strike Oil NL Seismic Surveys	2000/107		Completed
Thylacine-A Exploration Well	2000/81		Completed
Vic-P51 and Vic-P52 3D seismic survey	2002/799		Completed
Woolnorth Wind Farm Repowering	2024/09880		Assessment
Controlled action			
Alston-1 petroleum exploration well, permit VIC/P44	2003/1315	Controlled Action	Post-Approval
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Dairy Farm expansion on the Woolnorth property	2013/6710	Controlled Action	Completed
Glenelg Dolomite Quarry	2017/8021	Controlled Action	Post-Approval
Green Point Wind Farm	2001/529	Controlled Action	Post-Approval
Kentbruck Green Power Hub, Vic	2019/8510	Controlled Action	Assessment Approach
Otway Development	2002/621	Controlled Action	Post-Approval
Pacific Hydro (Portland) Wind Farm SW Victoria	2000/18	Controlled Action	Post-Approval
Pelican Point residential subdivision	2006/2529	Controlled Action	Completed
Residential Subdivision & Infrastructure Parish of Belfast	2005/1954	Controlled Action	Completed
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Strike Oil Gas Exploration Well, Otway Basin (VIC/P44)	2000/97	Controlled Action	Completed
Twelve Apostles Saddle Lookout	2019/8571	Controlled Action	Post-Approval
VIC Offshore Windfarm	2021/8966	Controlled Action	Assessment Approach
VICP61 2D Marine Seismic Survey	2008/4075	Controlled Action	Completed
White Rock Wind Farm	2003/986	Controlled Action	Completed
Wind Farm Construction	2000/12	Controlled Action	Post-Approval
Not controlled action			
Allendale wind farm	2007/3549	Not Controlled Action	Completed
Alteration of Grass Maintenance Regime within Powling St Wetlands	2012/6527	Not Controlled Action	Completed
Amrit-1 exploration well	2004/1572	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Apollo Bay Water Storage Basin, VIC	2012/6484	Not Controlled Action	Completed
Cape Jaffa anchorage marina and residences	2004/1816	Not Controlled Action	Completed
Capture of Juvenile Tasmanian Devils for Conservation Purposes	2007/3261	Not Controlled Action	Completed
Capture of Tasmanian Devils from Disease-Free Areas	2007/3883	Not Controlled Action	Completed
CO2 geosequestration - Otway Basin Pilot Project	2006/2699	Not Controlled Action	Completed
construction of pump station for pump diversion from the Barham River	2003/1242	Not Controlled Action	Completed
Drilling of Callister-1 exploration well in VIC/P51	2004/1633	Not Controlled Action	Completed
Eight Mile Creek Drainage Works, Peacocks Road, Eight Mile Creek, SA	2014/7170	Not Controlled Action	Completed
Enterprise 1 Exploration Drilling Program, near Port Campbell, Vic	2019/8438	Not Controlled Action	Completed
Exploration drilling for liquid/gaseous hydrocarbons	2004/1681	Not Controlled Action	Completed
Gas Field Development	2006/2635	Not Controlled Action	Completed
Gas Fields Development	2011/5879	Not Controlled Action	Completed
Gas Pipeline Installation	2005/2495	Not Controlled Action	Completed
Gleneig Spiny Crayfish Habitat Rehabilitation	2011/6164	Not Controlled Action	Completed
Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic	2015/7551	Not Controlled Action	Completed
Henry-1 Exploration Well, Petroleum Permit Area VIC/P44	2005/2147	Not Controlled Action	Completed
Huxley Hill Wind Farm expansion	2005/2499	Not Controlled Action	Completed
Huxley Hill Wind Farm Expansion	2002/570	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Kelly Swamp Boardwalk Construction	2010/5371	Not Controlled Action	Completed
Kongorong Wind Farm	2002/568	Not Controlled Action	Completed
Lot 5 Pelican Point Road, Pelican Point SA - Proposed New Dwelling	2021/9011	Not Controlled Action	Completed
Maintenance of Access Track and Weed Removal	2009/4973	Not Controlled Action	Completed
Minerva Cut Back Project, Vic	2017/8036	Not Controlled Action	Completed
Newfield wind farm	2007/3226	Not Controlled Action	Completed
Nirranda South Wind Farm Pty Ltd	2002/763	Not Controlled Action	Completed
Oceanlinx South Australia 1mW Greenwave Project	2012/6528	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed
Piccaninnie Ponds flow path restoration project, SA	2013/6711	Not Controlled Action	Completed
Port Campbell Headland Walking Trail Realignment	2012/6676	Not Controlled Action	Completed
Portland Landfill Borehole Installation, Vic	2017/7886	Not Controlled Action	Completed
Railway Bridge (H0151) Partial Demolition, Merri River	2010/5534	Not Controlled Action	Completed
Redevelopment Project to Upgrade and Extend the Portland Trawler Wharf	2008/4317	Not Controlled Action	Completed
Removal of AMSA Structure	2003/1131	Not Controlled Action	Completed
Residential/Resort/Golf Course development	2002/907	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Robe Golf Club - Golf Course Extension, SA	2017/7928	Not Controlled Action	Completed
Robe Golf Course, Allotment 2, Davenport Street, Robe, SA	2014/7178	Not Controlled Action	Completed
Ryan Corner Wind Farm	2005/2142	Not Controlled Action	Completed
Stage 1 residential subdivision, Anna Catherine Drive	2005/1992	Not Controlled Action	Completed
Track construction - Great Ocean Walk	2002/793	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Victorian Generator Project	2005/1984	Not Controlled Action	Completed
Water capture to restore wetlands	2007/3223	Not Controlled Action	Completed
West Triton Drilling Program - Otway Basin	2007/3909	Not Controlled Action	Completed
Wind Farm	2002/691	Not Controlled Action	Completed
Wind Farm Construction and Operation	2001/471	Not Controlled Action	Completed
Woakwine Wind Farm, SA	2011/6070	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2005/2295	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey, EPP33	2004/1794	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey in Permit Areas T/32P and T/33P	2002/845	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
2D Seismic Survey	2008/3962	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey	2003/1214	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey, Petroleum Exploration Permit Area EPP27	2006/2776	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey in VIC/P50 and VIC/P46	2004/1810	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey VIC/P50	2005/2313	Not Controlled Action (Particular Manner)	Post-Approval
2D Siesmic Marine Survey	2008/4074	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey near King Island	2004/1461	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
Astrolabe 3D Marine Seismic Survey	2011/6048	Not Controlled Action (Particular Manner)	Post-Approval
Benbows Paddock residential development, Cape Bridgewater	2007/3247	Not Controlled Action (Particular Manner)	Post-Approval
Bernoulli 3D Seismic Survey	2006/3053	Not Controlled Action (Particular Manner)	Post-Approval
BHPBilliton Otway 3D Seismic Survey	2007/3443	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
construction of a 14km , 33kV distribution line, including connection to the Lake Bonney Central win	2003/1108	Not Controlled Action (Particular Manner)	Post-Approval
Deepwater Sorell Basin 2001 Non-Exclusive 2D Seismic Survey	2001/156	Not Controlled Action (Particular Manner)	Post-Approval
Drill and Profile Exploration Well Somerset 1, License Area T34P	2009/5037	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
La Bella 3D Marine Seismic Survey, Otway Basin, VIC	2012/6683	Not Controlled Action (Particular Manner)	Post-Approval
Lakes Oil 3D Seismic Survey	2002/768	Not Controlled Action (Particular Manner)	Post-Approval
OTE10 2D Marine Seismic Survey	2009/5223	Not Controlled Action (Particular Manner)	Post-Approval
Otway Basin Exploration Drilling Campaign, Vic	2011/6125	Not Controlled Action (Particular Manner)	Post-Approval
Residential Development and Associated Infrastructure at Port Fairy	2012/6687	Not Controlled Action (Particular Manner)	Post-Approval
Santos 2D Seismic Survey VIC/P44 & VIC/P51	2003/1213	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval
Seismic Survey in Petroleum Permit Area EPP27	2002/648	Not Controlled Action (Particular Manner)	Post-Approval
Seismic Survey VIC-P46	2002/826	Not Controlled Action (Particular Manner)	Post-Approval
Shaw River Power Station construct gas pipeline and associated infrastructure	2009/5089	Not Controlled Action (Particular Manner)	Post-Approval
Shaw River Power Station Project - Water Supply Pipeline	2009/5091	Not Controlled Action (Particular Manner)	Post-Approval
Southern Gas Pipeline Project	2002/619	Not Controlled Action (Particular Manner)	Post-Approval
Southern Margins T/35P and T/36P 3D Seismic Surveys	2007/3817	Not Controlled Action (Particular Manner)	Post-Approval
Speculant 3D Transition Zone Seismic Survey	2010/5558	Not Controlled Action (Particular Manner)	Post-Approval
Surface Geochemical Exploration Program, TAS	2010/5780	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5700	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Vegetation clearance and residential subdivision near Mt Gambier	2004/1370	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval
Vic-P51 and Vic-P52 2D seismic survey	2002/811	Not Controlled Action (Particular Manner)	Post-Approval
Wolseley 3D seismic acquisition survey	2010/5703	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D & 3D Seismic Surveys - Permit Area - VIC/P50	2008/4517	Referral Decision	Completed
2D Seismic Survey	2008/3978	Referral Decision	Completed
3D Seismic Survey	2008/4014	Referral Decision	Completed
8 Lot Industrial Subdivision	2008/4527	Referral Decision	Completed
Portland Wave Energy Project	2008/3946	Referral Decision	Completed
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed
VICP61 2D Marine Seismic Survey	2008/3975	Referral Decision	Completed
Wind Farm	2001/139	Referral Decision	Completed
Wolseley 3D Seismic Acquisition Survey in Permit T/32P	2010/5291	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
Bonney Coast Upwelling	South-east
West Tasmania Canyons	South-east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known 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
Morus serrator Australasian Gannet [1020]	Aggregation	Known to occur
Morus serrator Australasian Gannet [1020]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Breeding	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Breeding	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Likely 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
Seals		
Neophoca cinerea Australian Sea Lion [22]	Foraging (male)	Known to occur
Neophoca cinerea Australian Sea Lion [22]	Foraging (male and female)	Known to occur
Sharks		
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (abundant food source)	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur
Physeter macrocephalus Sperm Whale [59]	Foraging likely (abundant food source)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Jul-2025

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Figure: Bass Strait Environmental Sector

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:	10
Wetlands of International Importance (Ramsar	11
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	14
Listed Threatened Species:	181
Listed Migratory Species:	79

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:	905
Commonwealth Heritage Places:	23
Listed Marine Species:	131
Whales and Other Cetaceans:	30
Critical Habitats:	1
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	7
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:	402
Regional Forest Agreements:	3
Nationally Important Wetlands:	45
EPBC Act Referrals:	403
Key Ecological Features (Marine):	None
Biologically Important Areas:	29
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places		[Resource Information]
Name	State	Legal Status
Historic		
Flemington Racecourse	VIC	Listed place
Great Ocean Road and Scenic Environs	VIC	Listed place
High Court of Australia (former)	VIC	Listed place
HMVS Cerberus	VIC	Listed place
Melbourne's Domain Parkland and Memorial Precinct	VIC	Listed place
Point Cook Air Base	VIC	Listed place
Point Nepean Defence Sites and Quarantine Station Area	VIC	Listed place
Quarantine Station and Surrounds	VIC	Within listed place
Queen Victoria Market	VIC	Listed place
Rippon Lea House and Garden	VIC	Listed place

Wetlands of International Importance (Ramsar Wetlands)	[Resource Information]
Ramsar Site Name	Proximity
Corner inlet	Within Ramsar site
East coast cape barren island lagoons	Within Ramsar site
Edithvale-seaford wetlands	Within Ramsar site
Flood plain lower ringarooma river	Within Ramsar site
Gippsland lakes	Within 10km of Ramsar site
Jocks lagoon	Within 10km of Ramsar site
Lavinia	Within Ramsar site
Little waterhouse lake	Within Ramsar site
Logan lagoon	Within Ramsar site

Ramsar Site Name	Proximity
Port phillip bay (western shoreline) and bellarine peninsula	Within Ramsar site
Western port	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)
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
Alpine Sphagnum Bogs and Associated Fens	Endangered	Community may occur within area
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community likely to occur within area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered	Community known to occur within area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area
King Island scrub complex	Endangered	Community likely to occur within area
Lowland Native Grasslands of Tasmania	Critically Endangered	Community likely to occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community likely to occur within area
Natural Temperate Grassland of the Victorian Volcanic Plain	Critically Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)	Critically Endangered	Community likely to occur within area
Tasmanian white gum (Eucalyptus viminalis) wet forest	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to 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		
Acanthiza pusilla magnirostris		
King Island Brown Thornbill, Brown Thornbill (King Island) [91709]	Endangered	Species or species habitat known to occur within area
Acanthornis magna greeniana		
King Island Scrubtit, Scrubtit (King Island) [82329]	Critically Endangered	Species or species habitat known to occur within area
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Breeding known to occur within area
Aphelocephala leucopsis		
Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area
Aquila audax fleayi		
Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Breeding likely to occur within area
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Arenaria interpres		
Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat may occur within area
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Breeding 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 known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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	Roosting known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat known to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route 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
Pardalotus quadragintus Forty-spotted Pardalote [418]	Endangered	Species or species habitat known to occur within area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Platycercus caledonicus brownii Green Rosella (King Island) [67041]	Vulnerable	Species or species habitat known 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
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	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 known to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area
Strepera fuliginosa colei Black Currawong (King Island) [67113]	Vulnerable	Breeding likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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	Breeding known 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
Thinornis cucullatus cucullatus Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
Tyto novaehollandiae castanops (Tasmanian population)		
Masked Owl (Tasmanian) [67051]	Vulnerable	Breeding known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area
CRUSTACEAN		
Astacopsis gouldi		
Giant Freshwater Crayfish, Tasmanian Giant Freshwater Lobster [64415]	Vulnerable	Species or species habitat known to occur within area
Engaeus granulatus		
Central North Burrowing Crayfish [78959]	Endangered	Species or species habitat known to occur within area
Engaeus martigener		
Furneaux Burrowing Crayfish [67220]	Endangered	Species or species habitat known to occur within area
Engaeus yabbimunna		
Burnie Burrowing Crayfish [66781]	Vulnerable	Species or species habitat known to occur within area
FISH		
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
Maccullochella peelii		
Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area
Nannoperca obscura		
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Seriolella brama		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
Thymichthys politus		
Red Handfish [83756]	Critically Endangered	Species or species habitat may occur within area
FROG		
Litoria aurea		
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely 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
Uperoleia martini		
Martin's Toadlet [1873]	Endangered	Species or species habitat may occur within area
INSECT		
Antipodia chaostola leucophaea		
Tasmanian Chaostola Skipper, Heath-sand Skipper [77672]	Endangered	Species or species habitat known to occur within area
Oreisplanus munionga larana		
Marrawah Skipper, Alpine Sedge Skipper, Alpine Skipper [77747]	Vulnerable	Species or species habitat known to occur within area
Synemon plana		
Golden Sun Moth [25234]	Vulnerable	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

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
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
Dasyurus maculatus maculatus (Tasmanian population) Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]	Vulnerable	Species or species habitat known to occur within area
Dasyurus viverrinus Eastern Quoll, Luaner [333]	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 known to occur within area
Miniopterus orianae bassanii Southern Bent-wing Bat [87645]	Critically Endangered	Roosting known to occur within area
Perameles gunnii gunnii Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Perameles gunnii Victorian subspecies		
Eastern Barred Bandicoot (Mainland) [88020]	Endangered	Translocated population known to occur within area
Petauroides volans		
Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area
Petaurus australis australis		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	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
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	Roosting known to occur within area
Sarcophilus harrisii		
Tasmanian Devil [299]	Endangered	Species or species habitat likely to occur within area
OTHER		
Megascolides australis		
Giant Gippsland Earthworm [64420]	Vulnerable	Species or species habitat known to occur within area
PLANT		
Amphibromus fluitans		
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat known to occur within area
Barbarea australis		
Native Wintercress, Riverbed Wintercress [12540]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Caladenia campbellii Thick-stem Caladenia, Thick-stem Fairy Fingers [64857]	Critically Endangered	Species or species habitat known to occur within area
Caladenia caudata Tailed Spider-orchid [17067]	Vulnerable	Species or species habitat known to occur within area
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area
Caladenia dienema Windswept Spider-orchid [64858]	Endangered	Species or species habitat may occur within area
Caladenia insularis French Island Spider-orchid [24372]	Vulnerable	Species or species habitat known to occur within area
Caladenia lindleyana Lindley's Spider-orchid [9305]	Critically Endangered	Species or species habitat known to occur within area
Caladenia orientalis Eastern Spider Orchid [83410]	Endangered	Species or species habitat known to occur within area
Caladenia pallida Rosy Spider Orchid, Pale Spider-orchid, Summer Spider-orchid [9604]	Critically Endangered	Species or species habitat likely to occur within area
Caladenia pumila Dwarf Spider-orchid [4155]	Critically Endangered	Species or species habitat likely to occur within area
Caladenia robinsonii Frankston Spider-orchid [24375]	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

Scientific Name	Threatened Category	Presence Text
Caladenia thysanochila Fringed Spider-orchid [24391]	Endangered	Species or species habitat likely to occur within area
Caladenia tonellii Robust Fingers [64861]	Critically Endangered	Species or species habitat known to occur within area
Cassinia rugata Wrinkled Cassinia, Wrinkled Dollybush [21885]	Vulnerable	Species or species habitat known to occur within area
Commersonia prostrata Dwarf Kerrawang [87152]	Endangered	Species or species habitat likely to occur within area
Conospermum hookeri Variable Smoke-bush [68161]	Vulnerable	Species or species habitat likely to occur within area
Corunastylis brachystachya Short-spiked Midge-orchid, Rocky Cape Midge Orchid [76410]	Endangered	Species or species habitat known to occur within area
Dianella amoena Matted Flax-lily [64886]	Endangered	Species or species habitat known to occur within area
Diuris basaltica Small Golden Moths Orchid, Early Golden Moths [64654]	Endangered	Species or species habitat may occur within area
Diuris fragrantissima Sunshine Diuris, Fragrant Doubletail, White Diuris [21243]	Endangered	Species or species habitat known to occur within area
Diuris lanceolata Snake Orchid [10231]	Endangered	Species or species habitat known to occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Epacris graniticola Mt Cameron Heath, Granite Heath [82822]	Critically Endangered	Species or species habitat may occur within area
Epacris virgata Pretty Heath, Dan Hill Heath [20375]	Endangered	Species or species habitat likely to occur within area
Eucalyptus strzeleckii Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area
Euphrasia collina subsp. muelleri Purple Eyebright, Mueller's Eyebright [16151]	Endangered	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Grevillea infecunda Anglesea Grevillea [22026]	Vulnerable	Species or species habitat known to occur within area
Hiya distans listed as Hypolepis distans Scrambling Ground-fern [92548]	Endangered	Species or species habitat known to occur within area
Lachnagrostis adamsonii Adamson's Blown-grass, Adamson's Blowngrass [76211]	Endangered	Species or species habitat known to occur within area
Leiocarpa gatesii Wrinkled Buttons [76212]	Vulnerable	Species or species habitat known to occur within area
Lepidium aschersonii Spiny Peppercress [10976]	Vulnerable	Species or species habitat known to occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat known to occur within area
Phebalium daviesii Davies' Waxflower, St Helens Waxflower [16959]	Critically Endangered	Species or species habitat likely to occur within area
Pimelea spinescens subsp. spinescens Plains Rice-flower, Spiny Rice-flower, Prickly Pimelea [21980]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum apoxychilum Tapered Leek-orchid [64947]	Endangered	Species or species habitat known to occur within area
Prasophyllum atratum Three Hummock Leek-orchid [82677]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum favonium Western Leek-orchid [64949]	Critically Endangered	Species or species habitat may 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 limnetes Marsh Leek-orchid [82678]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum pulchellum Pretty Leek-orchid [64953]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum robustum Robust Leek-orchid [12499]	Critically Endangered	Species or species habitat may occur within area
Prasophyllum secutum Northern Leek-orchid [64954]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum suaveolens Fragrant Leek-orchid [64956]	Endangered	Species or species habitat may occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat known to occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat known to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area
Pterostylis ziegeleri Grassland Greenhood, Cape Portland Greenhood [64971]	Vulnerable	Species or species habitat known to occur within area
Rutidosis leptorhynchoides Button Wrinklewort [67251]	Endangered	Species or species habitat known to occur within area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat known to occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known to occur within area
Spyridium obcordatum Creeping Dusty Miller [17447]	Vulnerable	Species or species habitat known to occur within area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thelymitra jonesii Sky-blue Sun-orchid [76352]	Endangered	Species or species habitat known to occur within area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Endangered	Species or species habitat known to occur within area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	Species or species habitat known to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Xanthorrhoea arenaria Sand Grasstree [21603]	Vulnerable	Species or species habitat likely to occur within area
Xanthorrhoea bracteata Shiny Grasstree [7950]	Endangered	Species or species habitat known to occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat known to occur within area
REPTILE		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	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
Tympanocryptis pinguicolla		
Victorian Grassland Earless Dragon [66727]	Critically 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
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		
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to 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 likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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 carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Breeding known 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
Migratory Marine Species		
[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	Foraging, feeding or related behaviour known 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 may occur within area
[Carcharias taurus](#) Grey Nurse Shark [64469]		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	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas		
Green Turtle [1765]	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
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	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
[Motacilla flava](#) Yellow Wagtail [644]		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
[Calidris ruficollis](#) Red-necked Stint [860]		Roosting known to occur within area
[Calidris subminuta](#) Long-toed Stint [861]		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

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius 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]		Species or species habitat known to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known 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 known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting 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 incana Wandering Tattler [831]		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
Defence	
Defence - Airport Builidng [21422]	VIC
Defence - AIRTC FOOTSCRAY [21356]	VIC
Defence - AIRTC GEELONG [21354]	VIC
Defence - AVALON AIRFIELD [21412]	VIC
Defence - AVALON AIRFIELD [21406]	VIC
Defence - AVALON AIRFIELD [21400]	VIC
Defence - AVALON AIRFIELD [21405]	VIC
Defence - AVALON AIRFIELD [21410]	VIC
Defence - AVALON AIRFIELD [21397]	VIC
Defence - AVALON AIRFIELD [21399]	VIC
Defence - AVALON AIRFIELD [21398]	VIC
Defence - AVALON AIRFIELD [21408]	VIC
Defence - AVALON AIRFIELD [21407]	VIC
Defence - AVALON AIRFIELD [21404]	VIC
Defence - AVALON AIRFIELD [21402]	VIC
Defence - AVALON AIRFIELD [21403]	VIC
Defence - AVALON AIRFIELD [21401]	VIC
Defence - AVALON AIRFIELD [21409]	VIC
Defence - AVALON AIRFIELD [21411]	VIC
Defence - BURNIE TRAINING DEPOT [60006]	TAS
Defence - CAULFIELD TRAINING DEPOT [20446]	VIC
Defence - CAULFIELD TRAINING DEPOT [20445]	VIC

Commonwealth Land Name	State
Defence - CAULFIELD TRAINING DEPOT [20447]	VIC
Defence - CROWS NEST CAMP - QUEENSCLIFF [21026]	VIC
Defence - CROWS NEST CAMP - QUEENSCLIFF [21027]	VIC
Defence - CROWS NEST CAMP - QUEENSCLIFF [21028]	VIC
Defence - CROWS NEST CAMP - QUEENSCLIFF [21029]	VIC
Defence - DEFENCE PLAZA MELBOURNE [21449]	VIC
Defence - DEVONPORT TRAINING DEPOT [60011]	TAS
Defence - DEVONPORT TRAINING DEPOT [60008]	TAS
Defence - DEVONPORT TRAINING DEPOT [60009]	TAS
Defence - DEVONPORT TRAINING DEPOT [60010]	TAS
Defence - DSTO FISHERMANS BEND [21396]	VIC
Defence - DSTO FISHERMANS BEND [21394]	VIC
Defence - DSTO FISHERMANS BEND [21395]	VIC
Defence - DSTO MARIBYRNONG [21413]	VIC
Defence - DSTO MARIBYRNONG [20952]	VIC
Defence - FORT GELLIBRAND [20995]	VIC
Defence - FORT GELLIBRAND [20996]	VIC
Defence - FORT GELLIBRAND [20997]	VIC
Defence - HAMEL BARRACKS [20645]	VIC
Defence - HAMEL BARRACKS [20644]	VIC
Defence - HAMEL BARRACKS [20649]	VIC
Defence - HAMEL BARRACKS [20648]	VIC
Defence - HAMEL BARRACKS [20647]	VIC
Defence - HAMEL BARRACKS [20646]	VIC
Defence - HAMEL BARRACKS [20627]	VIC
Defence - HAMEL BARRACKS [20624]	VIC
Defence - HAMEL BARRACKS [20625]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20628]	VIC
Defence - HAMEL BARRACKS [20629]	VIC
Defence - HAMEL BARRACKS [20626]	VIC
Defence - HAMEL BARRACKS [20888]	VIC
Defence - HAMEL BARRACKS [20620]	VIC
Defence - HAMEL BARRACKS [20621]	VIC
Defence - HAMEL BARRACKS [20582]	VIC
Defence - HAMEL BARRACKS [20623]	VIC
Defence - HAMEL BARRACKS [20720]	VIC
Defence - HAMEL BARRACKS [20732]	VIC
Defence - HAMEL BARRACKS [20731]	VIC
Defence - HAMEL BARRACKS [20730]	VIC
Defence - HAMEL BARRACKS [20737]	VIC
Defence - HAMEL BARRACKS [20733]	VIC
Defence - HAMEL BARRACKS [20927]	VIC
Defence - HAMEL BARRACKS [20926]	VIC
Defence - HAMEL BARRACKS [20929]	VIC
Defence - HAMEL BARRACKS [20928]	VIC
Defence - HAMEL BARRACKS [20925]	VIC
Defence - HAMEL BARRACKS [20922]	VIC
Defence - HAMEL BARRACKS [20924]	VIC
Defence - HAMEL BARRACKS [20643]	VIC
Defence - HAMEL BARRACKS [20640]	VIC
Defence - HAMEL BARRACKS [20642]	VIC
Defence - HAMEL BARRACKS [20641]	VIC
Defence - HAMEL BARRACKS [20469]	VIC
Defence - HAMEL BARRACKS [20480]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20482]	VIC
Defence - HAMEL BARRACKS [20485]	VIC
Defence - HAMEL BARRACKS [20489]	VIC
Defence - HAMEL BARRACKS [20488]	VIC
Defence - HAMEL BARRACKS [20481]	VIC
Defence - HAMEL BARRACKS [20726]	VIC
Defence - HAMEL BARRACKS [20725]	VIC
Defence - HAMEL BARRACKS [20728]	VIC
Defence - HAMEL BARRACKS [20727]	VIC
Defence - HAMEL BARRACKS [20722]	VIC
Defence - HAMEL BARRACKS [20721]	VIC
Defence - HAMEL BARRACKS [20724]	VIC
Defence - HAMEL BARRACKS [20723]	VIC
Defence - HAMEL BARRACKS [20484]	VIC
Defence - HAMEL BARRACKS [20790]	VIC
Defence - HAMEL BARRACKS [20654]	VIC
Defence - HAMEL BARRACKS [20653]	VIC
Defence - HAMEL BARRACKS [20652]	VIC
Defence - HAMEL BARRACKS [20823]	VIC
Defence - HAMEL BARRACKS [20822]	VIC
Defence - HAMEL BARRACKS [20820]	VIC
Defence - HAMEL BARRACKS [20827]	VIC
Defence - HAMEL BARRACKS [20826]	VIC
Defence - HAMEL BARRACKS [20825]	VIC
Defence - HAMEL BARRACKS [20824]	VIC
Defence - HAMEL BARRACKS [20829]	VIC
Defence - HAMEL BARRACKS [20828]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20885]	VIC
Defence - HAMEL BARRACKS [20811]	VIC
Defence - HAMEL BARRACKS [20887]	VIC
Defence - HAMEL BARRACKS [20884]	VIC
Defence - HAMEL BARRACKS [20881]	VIC
Defence - HAMEL BARRACKS [20886]	VIC
Defence - HAMEL BARRACKS [20883]	VIC
Defence - HAMEL BARRACKS [20880]	VIC
Defence - HAMEL BARRACKS [20889]	VIC
Defence - HAMEL BARRACKS [20882]	VIC
Defence - HAMEL BARRACKS [20930]	VIC
Defence - HAMEL BARRACKS [20734]	VIC
Defence - HAMEL BARRACKS [20559]	VIC
Defence - HAMEL BARRACKS [20551]	VIC
Defence - HAMEL BARRACKS [20558]	VIC
Defence - HAMEL BARRACKS [20553]	VIC
Defence - HAMEL BARRACKS [20554]	VIC
Defence - HAMEL BARRACKS [20638]	VIC
Defence - HAMEL BARRACKS [20738]	VIC
Defence - HAMEL BARRACKS [20736]	VIC
Defence - HAMEL BARRACKS [20739]	VIC
Defence - HAMEL BARRACKS [20735]	VIC
Defence - HAMEL BARRACKS [20658]	VIC
Defence - HAMEL BARRACKS [20659]	VIC
Defence - HAMEL BARRACKS [20657]	VIC
Defence - HAMEL BARRACKS [20656]	VIC
Defence - HAMEL BARRACKS [20655]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20698]	VIC
Defence - HAMEL BARRACKS [20847]	VIC
Defence - HAMEL BARRACKS [20844]	VIC
Defence - HAMEL BARRACKS [20944]	VIC
Defence - HAMEL BARRACKS [20846]	VIC
Defence - HAMEL BARRACKS [20496]	VIC
Defence - HAMEL BARRACKS [20509]	VIC
Defence - HAMEL BARRACKS [20502]	VIC
Defence - HAMEL BARRACKS [20503]	VIC
Defence - HAMEL BARRACKS [20500]	VIC
Defence - HAMEL BARRACKS [20501]	VIC
Defence - HAMEL BARRACKS [20506]	VIC
Defence - HAMEL BARRACKS [20507]	VIC
Defence - HAMEL BARRACKS [20504]	VIC
Defence - HAMEL BARRACKS [20505]	VIC
Defence - HAMEL BARRACKS [20593]	VIC
Defence - HAMEL BARRACKS [20591]	VIC
Defence - HAMEL BARRACKS [20592]	VIC
Defence - HAMEL BARRACKS [20597]	VIC
Defence - HAMEL BARRACKS [20590]	VIC
Defence - HAMEL BARRACKS [20508]	VIC
Defence - HAMEL BARRACKS [20596]	VIC
Defence - HAMEL BARRACKS [20512]	VIC
Defence - HAMEL BARRACKS [20848]	VIC
Defence - HAMEL BARRACKS [20849]	VIC
Defence - HAMEL BARRACKS [20598]	VIC
Defence - HAMEL BARRACKS [20599]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20594]	VIC
Defence - HAMEL BARRACKS [20595]	VIC
Defence - HAMEL BARRACKS [20841]	VIC
Defence - HAMEL BARRACKS [20757]	VIC
Defence - HAMEL BARRACKS [20752]	VIC
Defence - HAMEL BARRACKS [20755]	VIC
Defence - HAMEL BARRACKS [20843]	VIC
Defence - HAMEL BARRACKS [20845]	VIC
Defence - HAMEL BARRACKS [20618]	VIC
Defence - HAMEL BARRACKS [20619]	VIC
Defence - HAMEL BARRACKS [20931]	VIC
Defence - HAMEL BARRACKS [20933]	VIC
Defence - HAMEL BARRACKS [20612]	VIC
Defence - HAMEL BARRACKS [20613]	VIC
Defence - HAMEL BARRACKS [20614]	VIC
Defence - HAMEL BARRACKS [20615]	VIC
Defence - HAMEL BARRACKS [20616]	VIC
Defence - HAMEL BARRACKS [20617]	VIC
Defence - HAMEL BARRACKS [20486]	VIC
Defence - HAMEL BARRACKS [20750]	VIC
Defence - HAMEL BARRACKS [20759]	VIC
Defence - HAMEL BARRACKS [20753]	VIC
Defence - HAMEL BARRACKS [20950]	VIC
Defence - HAMEL BARRACKS [20935]	VIC
Defence - HAMEL BARRACKS [20934]	VIC
Defence - HAMEL BARRACKS [20932]	VIC
Defence - HAMEL BARRACKS [20939]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20938]	VIC
Defence - HAMEL BARRACKS [20937]	VIC
Defence - HAMEL BARRACKS [20936]	VIC
Defence - HAMEL BARRACKS [20668]	VIC
Defence - HAMEL BARRACKS [20538]	VIC
Defence - HAMEL BARRACKS [20539]	VIC
Defence - HAMEL BARRACKS [20530]	VIC
Defence - HAMEL BARRACKS [20531]	VIC
Defence - HAMEL BARRACKS [20532]	VIC
Defence - HAMEL BARRACKS [20533]	VIC
Defence - HAMEL BARRACKS [20534]	VIC
Defence - HAMEL BARRACKS [20535]	VIC
Defence - HAMEL BARRACKS [20536]	VIC
Defence - HAMEL BARRACKS [20537]	VIC
Defence - HAMEL BARRACKS [20749]	VIC
Defence - HAMEL BARRACKS [20611]	VIC
Defence - HAMEL BARRACKS [20610]	VIC
Defence - HAMEL BARRACKS [20741]	VIC
Defence - HAMEL BARRACKS [20748]	VIC
Defence - HAMEL BARRACKS [20740]	VIC
Defence - HAMEL BARRACKS [20743]	VIC
Defence - HAMEL BARRACKS [20742]	VIC
Defence - HAMEL BARRACKS [20745]	VIC
Defence - HAMEL BARRACKS [20744]	VIC
Defence - HAMEL BARRACKS [20747]	VIC
Defence - HAMEL BARRACKS [20746]	VIC
Defence - HAMEL BARRACKS [20585]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20584]	VIC
Defence - HAMEL BARRACKS [20589]	VIC
Defence - HAMEL BARRACKS [20588]	VIC
Defence - HAMEL BARRACKS [20587]	VIC
Defence - HAMEL BARRACKS [20586]	VIC
Defence - HAMEL BARRACKS [20855]	VIC
Defence - HAMEL BARRACKS [20854]	VIC
Defence - HAMEL BARRACKS [20857]	VIC
Defence - HAMEL BARRACKS [20856]	VIC
Defence - HAMEL BARRACKS [20852]	VIC
Defence - HAMEL BARRACKS [20850]	VIC
Defence - HAMEL BARRACKS [20853]	VIC
Defence - HAMEL BARRACKS [20859]	VIC
Defence - HAMEL BARRACKS [20851]	VIC
Defence - HAMEL BARRACKS [20680]	VIC
Defence - HAMEL BARRACKS [20688]	VIC
Defence - HAMEL BARRACKS [20583]	VIC
Defence - HAMEL BARRACKS [20581]	VIC
Defence - HAMEL BARRACKS [20580]	VIC
Defence - HAMEL BARRACKS [20529]	VIC
Defence - HAMEL BARRACKS [20524]	VIC
Defence - HAMEL BARRACKS [20525]	VIC
Defence - HAMEL BARRACKS [20699]	VIC
Defence - HAMEL BARRACKS [20696]	VIC
Defence - HAMEL BARRACKS [20695]	VIC
Defence - HAMEL BARRACKS [20694]	VIC
Defence - HAMEL BARRACKS [20693]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20692]	VIC
Defence - HAMEL BARRACKS [20691]	VIC
Defence - HAMEL BARRACKS [20690]	VIC
Defence - HAMEL BARRACKS [20550]	VIC
Defence - HAMEL BARRACKS [20552]	VIC
Defence - HAMEL BARRACKS [20842]	VIC
Defence - HAMEL BARRACKS [20840]	VIC
Defence - HAMEL BARRACKS [20472]	VIC
Defence - HAMEL BARRACKS [20697]	VIC
Defence - HAMEL BARRACKS [20821]	VIC
Defence - HAMEL BARRACKS [20476]	VIC
Defence - HAMEL BARRACKS [20475]	VIC
Defence - HAMEL BARRACKS [20768]	VIC
Defence - HAMEL BARRACKS [20769]	VIC
Defence - HAMEL BARRACKS [20764]	VIC
Defence - HAMEL BARRACKS [20765]	VIC
Defence - HAMEL BARRACKS [20766]	VIC
Defence - HAMEL BARRACKS [20763]	VIC
Defence - HAMEL BARRACKS [20762]	VIC
Defence - HAMEL BARRACKS [20760]	VIC
Defence - HAMEL BARRACKS [20767]	VIC
Defence - HAMEL BARRACKS [20522]	VIC
Defence - HAMEL BARRACKS [20526]	VIC
Defence - HAMEL BARRACKS [20521]	VIC
Defence - HAMEL BARRACKS [20520]	VIC
Defence - HAMEL BARRACKS [20523]	VIC
Defence - HAMEL BARRACKS [20527]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20518]	VIC
Defence - HAMEL BARRACKS [20519]	VIC
Defence - HAMEL BARRACKS [20517]	VIC
Defence - HAMEL BARRACKS [20513]	VIC
Defence - HAMEL BARRACKS [20510]	VIC
Defence - HAMEL BARRACKS [20514]	VIC
Defence - HAMEL BARRACKS [20515]	VIC
Defence - HAMEL BARRACKS [20516]	VIC
Defence - HAMEL BARRACKS [20761]	VIC
Defence - HAMEL BARRACKS [20683]	VIC
Defence - HAMEL BARRACKS [20689]	VIC
Defence - HAMEL BARRACKS [20681]	VIC
Defence - HAMEL BARRACKS [20682]	VIC
Defence - HAMEL BARRACKS [20686]	VIC
Defence - HAMEL BARRACKS [20687]	VIC
Defence - HAMEL BARRACKS [20685]	VIC
Defence - HAMEL BARRACKS [20776]	VIC
Defence - HAMEL BARRACKS [20777]	VIC
Defence - HAMEL BARRACKS [20778]	VIC
Defence - HAMEL BARRACKS [20779]	VIC
Defence - HAMEL BARRACKS [20772]	VIC
Defence - HAMEL BARRACKS [20773]	VIC
Defence - HAMEL BARRACKS [20774]	VIC
Defence - HAMEL BARRACKS [20775]	VIC
Defence - HAMEL BARRACKS [20921]	VIC
Defence - HAMEL BARRACKS [20729]	VIC
Defence - HAMEL BARRACKS [20923]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20920]	VIC
Defence - HAMEL BARRACKS [20684]	VIC
Defence - HAMEL BARRACKS [20873]	VIC
Defence - HAMEL BARRACKS [20702]	VIC
Defence - HAMEL BARRACKS [20705]	VIC
Defence - HAMEL BARRACKS [20528]	VIC
Defence - HAMEL BARRACKS [20872]	VIC
Defence - HAMEL BARRACKS [20564]	VIC
Defence - HAMEL BARRACKS [20673]	VIC
Defence - HAMEL BARRACKS [20670]	VIC
Defence - HAMEL BARRACKS [20675]	VIC
Defence - HAMEL BARRACKS [20672]	VIC
Defence - HAMEL BARRACKS [20677]	VIC
Defence - HAMEL BARRACKS [20674]	VIC
Defence - HAMEL BARRACKS [20679]	VIC
Defence - HAMEL BARRACKS [20917]	VIC
Defence - HAMEL BARRACKS [20671]	VIC
Defence - HAMEL BARRACKS [20678]	VIC
Defence - HAMEL BARRACKS [20915]	VIC
Defence - HAMEL BARRACKS [20708]	VIC
Defence - HAMEL BARRACKS [20709]	VIC
Defence - HAMEL BARRACKS [20703]	VIC
Defence - HAMEL BARRACKS [20700]	VIC
Defence - HAMEL BARRACKS [20701]	VIC
Defence - HAMEL BARRACKS [20706]	VIC
Defence - HAMEL BARRACKS [20707]	VIC
Defence - HAMEL BARRACKS [20916]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20704]	VIC
Defence - HAMEL BARRACKS [20919]	VIC
Defence - HAMEL BARRACKS [20913]	VIC
Defence - HAMEL BARRACKS [20912]	VIC
Defence - HAMEL BARRACKS [20914]	VIC
Defence - HAMEL BARRACKS [20911]	VIC
Defence - HAMEL BARRACKS [20910]	VIC
Defence - HAMEL BARRACKS [20918]	VIC
Defence - HAMEL BARRACKS [20770]	VIC
Defence - HAMEL BARRACKS [20771]	VIC
Defence - HAMEL BARRACKS [20858]	VIC
Defence - HAMEL BARRACKS [20603]	VIC
Defence - HAMEL BARRACKS [20483]	VIC
Defence - HAMEL BARRACKS [20608]	VIC
Defence - HAMEL BARRACKS [20609]	VIC
Defence - HAMEL BARRACKS [20604]	VIC
Defence - HAMEL BARRACKS [20605]	VIC
Defence - HAMEL BARRACKS [20606]	VIC
Defence - HAMEL BARRACKS [20607]	VIC
Defence - HAMEL BARRACKS [20600]	VIC
Defence - HAMEL BARRACKS [20601]	VIC
Defence - HAMEL BARRACKS [20602]	VIC
Defence - HAMEL BARRACKS [20903]	VIC
Defence - HAMEL BARRACKS [20902]	VIC
Defence - HAMEL BARRACKS [20909]	VIC
Defence - HAMEL BARRACKS [20908]	VIC
Defence - HAMEL BARRACKS [20907]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20906]	VIC
Defence - HAMEL BARRACKS [20901]	VIC
Defence - HAMEL BARRACKS [20900]	VIC
Defence - HAMEL BARRACKS [20905]	VIC
Defence - HAMEL BARRACKS [20904]	VIC
Defence - HAMEL BARRACKS [20874]	VIC
Defence - HAMEL BARRACKS [20879]	VIC
Defence - HAMEL BARRACKS [20876]	VIC
Defence - HAMEL BARRACKS [20875]	VIC
Defence - HAMEL BARRACKS [20871]	VIC
Defence - HAMEL BARRACKS [20877]	VIC
Defence - HAMEL BARRACKS [20878]	VIC
Defence - HAMEL BARRACKS [20568]	VIC
Defence - HAMEL BARRACKS [20569]	VIC
Defence - HAMEL BARRACKS [20565]	VIC
Defence - HAMEL BARRACKS [20562]	VIC
Defence - HAMEL BARRACKS [20566]	VIC
Defence - HAMEL BARRACKS [20567]	VIC
Defence - HAMEL BARRACKS [20563]	VIC
Defence - HAMEL BARRACKS [20561]	VIC
Defence - HAMEL BARRACKS [20560]	VIC
Defence - HAMEL BARRACKS [20818]	VIC
Defence - HAMEL BARRACKS [20819]	VIC
Defence - HAMEL BARRACKS [20812]	VIC
Defence - HAMEL BARRACKS [20813]	VIC
Defence - HAMEL BARRACKS [20816]	VIC
Defence - HAMEL BARRACKS [20810]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20803]	VIC
Defence - HAMEL BARRACKS [20800]	VIC
Defence - HAMEL BARRACKS [20802]	VIC
Defence - HAMEL BARRACKS [20487]	VIC
Defence - HAMEL BARRACKS [20794]	VIC
Defence - HAMEL BARRACKS [20795]	VIC
Defence - HAMEL BARRACKS [20796]	VIC
Defence - HAMEL BARRACKS [20797]	VIC
Defence - HAMEL BARRACKS [20801]	VIC
Defence - HAMEL BARRACKS [20806]	VIC
Defence - HAMEL BARRACKS [20807]	VIC
Defence - HAMEL BARRACKS [20804]	VIC
Defence - HAMEL BARRACKS [20805]	VIC
Defence - HAMEL BARRACKS [20808]	VIC
Defence - HAMEL BARRACKS [20809]	VIC
Defence - HAMEL BARRACKS [20511]	VIC
Defence - HAMEL BARRACKS [20571]	VIC
Defence - HAMEL BARRACKS [20573]	VIC
Defence - HAMEL BARRACKS [20575]	VIC
Defence - HAMEL BARRACKS [20574]	VIC
Defence - HAMEL BARRACKS [20576]	VIC
Defence - HAMEL BARRACKS [20572]	VIC
Defence - HAMEL BARRACKS [20570]	VIC
Defence - HAMEL BARRACKS [20578]	VIC
Defence - HAMEL BARRACKS [20579]	VIC
Defence - HAMEL BARRACKS [20780]	VIC
Defence - HAMEL BARRACKS [20781]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20786]	VIC
Defence - HAMEL BARRACKS [20787]	VIC
Defence - HAMEL BARRACKS [20782]	VIC
Defence - HAMEL BARRACKS [20651]	VIC
Defence - HAMEL BARRACKS [20783]	VIC
Defence - HAMEL BARRACKS [20814]	VIC
Defence - HAMEL BARRACKS [20817]	VIC
Defence - HAMEL BARRACKS [20650]	VIC
Defence - HAMEL BARRACKS [20815]	VIC
Defence - HAMEL BARRACKS [20789]	VIC
Defence - HAMEL BARRACKS [20788]	VIC
Defence - HAMEL BARRACKS [20785]	VIC
Defence - HAMEL BARRACKS [20784]	VIC
Defence - HAMEL BARRACKS [20892]	VIC
Defence - HAMEL BARRACKS [20893]	VIC
Defence - HAMEL BARRACKS [20899]	VIC
Defence - HAMEL BARRACKS [20868]	VIC
Defence - HAMEL BARRACKS [20895]	VIC
Defence - HAMEL BARRACKS [20898]	VIC
Defence - HAMEL BARRACKS [20897]	VIC
Defence - HAMEL BARRACKS [20894]	VIC
Defence - HAMEL BARRACKS [20891]	VIC
Defence - HAMEL BARRACKS [20896]	VIC
Defence - HAMEL BARRACKS [20890]	VIC
Defence - HAMEL BARRACKS [20861]	VIC
Defence - HAMEL BARRACKS [20860]	VIC
Defence - HAMEL BARRACKS [20758]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20751]	VIC
Defence - HAMEL BARRACKS [20869]	VIC
Defence - HAMEL BARRACKS [20867]	VIC
Defence - HAMEL BARRACKS [20866]	VIC
Defence - HAMEL BARRACKS [20865]	VIC
Defence - HAMEL BARRACKS [20863]	VIC
Defence - HAMEL BARRACKS [20864]	VIC
Defence - HAMEL BARRACKS [20862]	VIC
Defence - HAMEL BARRACKS [20479]	VIC
Defence - HAMEL BARRACKS [20478]	VIC
Defence - HAMEL BARRACKS [20712]	VIC
Defence - HAMEL BARRACKS [20713]	VIC
Defence - HAMEL BARRACKS [20474]	VIC
Defence - HAMEL BARRACKS [20473]	VIC
Defence - HAMEL BARRACKS [20471]	VIC
Defence - HAMEL BARRACKS [20470]	VIC
Defence - HAMEL BARRACKS [20477]	VIC
Defence - HAMEL BARRACKS [20754]	VIC
Defence - HAMEL BARRACKS [20664]	VIC
Defence - HAMEL BARRACKS [20665]	VIC
Defence - HAMEL BARRACKS [20662]	VIC
Defence - HAMEL BARRACKS [20663]	VIC
Defence - HAMEL BARRACKS [20660]	VIC
Defence - HAMEL BARRACKS [20661]	VIC
Defence - HAMEL BARRACKS [20669]	VIC
Defence - HAMEL BARRACKS [20756]	VIC
Defence - HAMEL BARRACKS [20667]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20719]	VIC
Defence - HAMEL BARRACKS [20666]	VIC
Defence - HAMEL BARRACKS [20711]	VIC
Defence - HAMEL BARRACKS [20716]	VIC
Defence - HAMEL BARRACKS [20710]	VIC
Defence - HAMEL BARRACKS [20715]	VIC
Defence - HAMEL BARRACKS [20718]	VIC
Defence - HAMEL BARRACKS [20717]	VIC
Defence - HAMEL BARRACKS [20714]	VIC
Defence - HAMEL BARRACKS [20577]	VIC
Defence - HAMEL BARRACKS [20798]	VIC
Defence - HAMEL BARRACKS [20792]	VIC
Defence - HAMEL BARRACKS [20799]	VIC
Defence - HAMEL BARRACKS [20791]	VIC
Defence - HAMEL BARRACKS [20793]	VIC
Defence - HAMEL BARRACKS [20547]	VIC
Defence - HAMEL BARRACKS [20544]	VIC
Defence - HAMEL BARRACKS [20545]	VIC
Defence - HAMEL BARRACKS [20546]	VIC
Defence - HAMEL BARRACKS [20541]	VIC
Defence - HAMEL BARRACKS [20540]	VIC
Defence - HAMEL BARRACKS [20548]	VIC
Defence - HAMEL BARRACKS [20549]	VIC
Defence - HAMEL BARRACKS [20542]	VIC
Defence - HAMEL BARRACKS [20543]	VIC
Defence - HAMEL BARRACKS [20622]	VIC
Defence - HAMEL BARRACKS [20948]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20949]	VIC
Defence - HAMEL BARRACKS [20940]	VIC
Defence - HAMEL BARRACKS [20941]	VIC
Defence - HAMEL BARRACKS [20942]	VIC
Defence - HAMEL BARRACKS [20943]	VIC
Defence - HAMEL BARRACKS [20946]	VIC
Defence - HAMEL BARRACKS [20945]	VIC
Defence - HAMEL BARRACKS [20497]	VIC
Defence - HAMEL BARRACKS [20947]	VIC
Defence - HAMEL BARRACKS [20635]	VIC
Defence - HAMEL BARRACKS [20634]	VIC
Defence - HAMEL BARRACKS [20556]	VIC
Defence - HAMEL BARRACKS [20557]	VIC
Defence - HAMEL BARRACKS [20631]	VIC
Defence - HAMEL BARRACKS [20630]	VIC
Defence - HAMEL BARRACKS [20637]	VIC
Defence - HAMEL BARRACKS [20636]	VIC
Defence - HAMEL BARRACKS [20633]	VIC
Defence - HAMEL BARRACKS [20639]	VIC
Defence - HAMEL BARRACKS [20632]	VIC
Defence - HAMEL BARRACKS [20555]	VIC
Defence - HAMEL BARRACKS [20499]	VIC
Defence - HAMEL BARRACKS [20498]	VIC
Defence - HAMEL BARRACKS [20491]	VIC
Defence - HAMEL BARRACKS [20490]	VIC
Defence - HAMEL BARRACKS [20495]	VIC
Defence - HAMEL BARRACKS [20494]	VIC

Commonwealth Land Name	State
Defence - HAMEL BARRACKS [20493]	VIC
Defence - HAMEL BARRACKS [20492]	VIC
Defence - HAMEL BARRACKS [20831]	VIC
Defence - HAMEL BARRACKS [20832]	VIC
Defence - HAMEL BARRACKS [20830]	VIC
Defence - HAMEL BARRACKS [20837]	VIC
Defence - HAMEL BARRACKS [20838]	VIC
Defence - HAMEL BARRACKS [20839]	VIC
Defence - HAMEL BARRACKS [20870]	VIC
Defence - HAMEL BARRACKS [20834]	VIC
Defence - HAMEL BARRACKS [20833]	VIC
Defence - HAMEL BARRACKS [20836]	VIC
Defence - HAMEL BARRACKS [20835]	VIC
Defence - HAMEL BARRACKS [20676]	VIC
Defence - HMAS CERBERUS [20081]	VIC
Defence - HMAS CERBERUS [20083]	VIC
Defence - HMAS CERBERUS [20082]	VIC
Defence - HMAS CERBERUS [20084]	VIC
Defence - HMAS CERBERUS [20087]	VIC
Defence - HMAS CERBERUS [20088]	VIC
Defence - HMAS CERBERUS [20085]	VIC
Defence - HMAS CERBERUS [20086]	VIC
Defence - HMAS CERBERUS [20089]	VIC
Defence - HMAS CERBERUS [20095]	VIC
Defence - HMAS CERBERUS [20097]	VIC
Defence - HMAS CERBERUS [20094]	VIC
Defence - HMAS CERBERUS [20096]	VIC

Commonwealth Land Name	State
Defence - HMAS CERBERUS [20091]	VIC
Defence - HMAS CERBERUS [20090]	VIC
Defence - HMAS CERBERUS [20093]	VIC
Defence - HMAS CERBERUS [20098]	VIC
Defence - HMAS CERBERUS [20099]	VIC
Defence - HMAS CERBERUS [20092]	VIC
Defence - HMAS CERBERUS [20101]	VIC
Defence - HMAS CERBERUS [20102]	VIC
Defence - HMAS CERBERUS [20103]	VIC
Defence - HMAS CERBERUS [20104]	VIC
Defence - HMAS CERBERUS [20100]	VIC
Defence - HMAS CERBERUS [20080]	VIC
Defence - HMAS LONSDALE [21351]	VIC
Defence - HMAS LONSDALE [21350]	VIC
Defence - HMAS LONSDALE [21353]	VIC
Defence - HMAS LONSDALE [21352]	VIC
Defence - HMAS LONSDALE [21347]	VIC
Defence - HMAS LONSDALE [21346]	VIC
Defence - HMAS LONSDALE [21345]	VIC
Defence - HMAS LONSDALE [21349]	VIC
Defence - HMAS LONSDALE [21348]	VIC
Defence - MARIBYRNONG COMPLEX [21194]	VIC
Defence - MARIBYRNONG COMPLEX [21193]	VIC
Defence - MARIBYRNONG COMPLEX [21195]	VIC
Defence - MARIBYRNONG COMPLEX [21190]	VIC
Defence - MARIBYRNONG COMPLEX [21199]	VIC
Defence - MARIBYRNONG COMPLEX [21192]	VIC

Commonwealth Land Name	State
Defence - MARIBYRNONG COMPLEX [21191]	VIC
Defence - MARIBYRNONG COMPLEX [21198]	VIC
Defence - MARIBYRNONG COMPLEX [21289]	VIC
Defence - MARIBYRNONG COMPLEX [21266]	VIC
Defence - MARIBYRNONG COMPLEX [21263]	VIC
Defence - MARIBYRNONG COMPLEX [21197]	VIC
Defence - MARIBYRNONG COMPLEX [21288]	VIC
Defence - MARIBYRNONG COMPLEX [21286]	VIC
Defence - MARIBYRNONG COMPLEX [21287]	VIC
Defence - MARIBYRNONG COMPLEX [21284]	VIC
Defence - MARIBYRNONG COMPLEX [21285]	VIC
Defence - MARIBYRNONG COMPLEX [21282]	VIC
Defence - MARIBYRNONG COMPLEX [21283]	VIC
Defence - MARIBYRNONG COMPLEX [21258]	VIC
Defence - MARIBYRNONG COMPLEX [21280]	VIC
Defence - MARIBYRNONG COMPLEX [21324]	VIC
Defence - MARIBYRNONG COMPLEX [21327]	VIC
Defence - MARIBYRNONG COMPLEX [21325]	VIC
Defence - MARIBYRNONG COMPLEX [21326]	VIC
Defence - MARIBYRNONG COMPLEX [21323]	VIC
Defence - MARIBYRNONG COMPLEX [21322]	VIC
Defence - MARIBYRNONG COMPLEX [21328]	VIC
Defence - MARIBYRNONG COMPLEX [21329]	VIC
Defence - MARIBYRNONG COMPLEX [21320]	VIC
Defence - MARIBYRNONG COMPLEX [21321]	VIC
Defence - MARIBYRNONG COMPLEX [21332]	VIC
Defence - MARIBYRNONG COMPLEX [21333]	VIC

Commonwealth Land Name	State
Defence - MARIBYRNONG COMPLEX [21338]	VIC
Defence - MARIBYRNONG COMPLEX [21129]	VIC
Defence - MARIBYRNONG COMPLEX [21339]	VIC
Defence - MARIBYRNONG COMPLEX [21209]	VIC
Defence - MARIBYRNONG COMPLEX [21200]	VIC
Defence - MARIBYRNONG COMPLEX [21208]	VIC
Defence - MARIBYRNONG COMPLEX [21205]	VIC
Defence - MARIBYRNONG COMPLEX [21207]	VIC
Defence - MARIBYRNONG COMPLEX [21201]	VIC
Defence - MARIBYRNONG COMPLEX [21203]	VIC
Defence - MARIBYRNONG COMPLEX [21128]	VIC
Defence - MARIBYRNONG COMPLEX [21126]	VIC
Defence - MARIBYRNONG COMPLEX [21127]	VIC
Defence - MARIBYRNONG COMPLEX [21124]	VIC
Defence - MARIBYRNONG COMPLEX [21125]	VIC
Defence - MARIBYRNONG COMPLEX [21122]	VIC
Defence - MARIBYRNONG COMPLEX [21123]	VIC
Defence - MARIBYRNONG COMPLEX [21120]	VIC
Defence - MARIBYRNONG COMPLEX [21121]	VIC
Defence - MARIBYRNONG COMPLEX [21334]	VIC
Defence - MARIBYRNONG COMPLEX [21336]	VIC
Defence - MARIBYRNONG COMPLEX [21335]	VIC
Defence - MARIBYRNONG COMPLEX [21331]	VIC
Defence - MARIBYRNONG COMPLEX [21337]	VIC
Defence - MARIBYRNONG COMPLEX [21113]	VIC
Defence - MARIBYRNONG COMPLEX [21115]	VIC
Defence - MARIBYRNONG COMPLEX [21114]	VIC

Commonwealth Land Name	State
Defence - MARIBYRNONG COMPLEX [21116]	VIC
Defence - MARIBYRNONG COMPLEX [21261]	VIC
Defence - MARIBYRNONG COMPLEX [21265]	VIC
Defence - MARIBYRNONG COMPLEX [21264]	VIC
Defence - MARIBYRNONG COMPLEX [21260]	VIC
Defence - MARIBYRNONG COMPLEX [21262]	VIC
Defence - MARIBYRNONG COMPLEX [21170]	VIC
Defence - MARIBYRNONG COMPLEX [21171]	VIC
Defence - MARIBYRNONG COMPLEX [21172]	VIC
Defence - MARIBYRNONG COMPLEX [21178]	VIC
Defence - MARIBYRNONG COMPLEX [21179]	VIC
Defence - MARIBYRNONG COMPLEX [21149]	VIC
Defence - MARIBYRNONG COMPLEX [21306]	VIC
Defence - MARIBYRNONG COMPLEX [21305]	VIC
Defence - MARIBYRNONG COMPLEX [21174]	VIC
Defence - MARIBYRNONG COMPLEX [21175]	VIC
Defence - MARIBYRNONG COMPLEX [21176]	VIC
Defence - MARIBYRNONG COMPLEX [21177]	VIC
Defence - MARIBYRNONG COMPLEX [21204]	VIC
Defence - MARIBYRNONG COMPLEX [21206]	VIC
Defence - MARIBYRNONG COMPLEX [21302]	VIC
Defence - MARIBYRNONG COMPLEX [21267]	VIC
Defence - MARIBYRNONG COMPLEX [21268]	VIC
Defence - MARIBYRNONG COMPLEX [21269]	VIC
Defence - MARIBYRNONG COMPLEX [21330]	VIC
Defence - MARIBYRNONG COMPLEX [21187]	VIC
Defence - MARIBYRNONG COMPLEX [21186]	VIC

Commonwealth Land Name	State
Defence - MARIBYRNONG COMPLEX [21183]	VIC
Defence - MARIBYRNONG COMPLEX [21182]	VIC
Defence - MARIBYRNONG COMPLEX [21181]	VIC
Defence - MARIBYRNONG COMPLEX [21180]	VIC
Defence - MARIBYRNONG COMPLEX [21188]	VIC
Defence - MARIBYRNONG COMPLEX [21184]	VIC
Defence - MARIBYRNONG COMPLEX [21185]	VIC
Defence - MARIBYRNONG COMPLEX [21212]	VIC
Defence - MARIBYRNONG COMPLEX [21214]	VIC
Defence - MARIBYRNONG COMPLEX [21215]	VIC
Defence - MARIBYRNONG COMPLEX [21210]	VIC
Defence - MARIBYRNONG COMPLEX [21211]	VIC
Defence - MARIBYRNONG COMPLEX [21216]	VIC
Defence - MARIBYRNONG COMPLEX [21217]	VIC
Defence - MARIBYRNONG COMPLEX [21293]	VIC
Defence - MARIBYRNONG COMPLEX [21292]	VIC
Defence - MARIBYRNONG COMPLEX [21291]	VIC
Defence - MARIBYRNONG COMPLEX [21296]	VIC
Defence - MARIBYRNONG COMPLEX [21290]	VIC
Defence - MARIBYRNONG COMPLEX [21294]	VIC
Defence - MARIBYRNONG COMPLEX [21295]	VIC
Defence - MARIBYRNONG COMPLEX [21298]	VIC
Defence - MARIBYRNONG COMPLEX [21299]	VIC
Defence - MARIBYRNONG COMPLEX [21297]	VIC
Defence - MARIBYRNONG COMPLEX [21169]	VIC
Defence - MARIBYRNONG COMPLEX [21117]	VIC
Defence - MARIBYRNONG COMPLEX [21281]	VIC

Commonwealth Land Name	State
Defence - MARIBYRNONG COMPLEX [21118]	VIC
Defence - MARIBYRNONG COMPLEX [21119]	VIC
Defence - MARIBYRNONG COMPLEX [21168]	VIC
Defence - MARIBYRNONG COMPLEX [21161]	VIC
Defence - MARIBYRNONG COMPLEX [21162]	VIC
Defence - MARIBYRNONG COMPLEX [21165]	VIC
Defence - MARIBYRNONG COMPLEX [21160]	VIC
Defence - MARIBYRNONG COMPLEX [21163]	VIC
Defence - MARIBYRNONG COMPLEX [21164]	VIC
Defence - MARIBYRNONG COMPLEX [21167]	VIC
Defence - MARIBYRNONG COMPLEX [21166]	VIC
Defence - MARIBYRNONG COMPLEX [21312]	VIC
Defence - MARIBYRNONG COMPLEX [21213]	VIC
Defence - MARIBYRNONG COMPLEX [21219]	VIC
Defence - MARIBYRNONG COMPLEX [21218]	VIC
Defence - MARIBYRNONG COMPLEX [21242]	VIC
Defence - MARIBYRNONG COMPLEX [21247]	VIC
Defence - MARIBYRNONG COMPLEX [21246]	VIC
Defence - MARIBYRNONG COMPLEX [21241]	VIC
Defence - MARIBYRNONG COMPLEX [21240]	VIC
Defence - MARIBYRNONG COMPLEX [21245]	VIC
Defence - MARIBYRNONG COMPLEX [21244]	VIC
Defence - MARIBYRNONG COMPLEX [21159]	VIC
Defence - MARIBYRNONG COMPLEX [21154]	VIC
Defence - MARIBYRNONG COMPLEX [21158]	VIC
Defence - MARIBYRNONG COMPLEX [21157]	VIC
Defence - MARIBYRNONG COMPLEX [21155]	VIC

Commonwealth Land Name	State
Defence - MARIBYRNONG COMPLEX [21156]	VIC
Defence - MARIBYRNONG COMPLEX [21274]	VIC
Defence - MARIBYRNONG COMPLEX [21275]	VIC
Defence - MARIBYRNONG COMPLEX [21272]	VIC
Defence - MARIBYRNONG COMPLEX [21273]	VIC
Defence - MARIBYRNONG COMPLEX [21279]	VIC
Defence - MARIBYRNONG COMPLEX [21276]	VIC
Defence - MARIBYRNONG COMPLEX [21277]	VIC
Defence - MARIBYRNONG COMPLEX [21270]	VIC
Defence - MARIBYRNONG COMPLEX [21271]	VIC
Defence - MARIBYRNONG COMPLEX [21202]	VIC
Defence - MARIBYRNONG COMPLEX [21278]	VIC
Defence - MARIBYRNONG COMPLEX [21150]	VIC
Defence - MARIBYRNONG COMPLEX [21152]	VIC
Defence - MARIBYRNONG COMPLEX [21153]	VIC
Defence - MARIBYRNONG COMPLEX [21222]	VIC
Defence - MARIBYRNONG COMPLEX [21151]	VIC
Defence - MARIBYRNONG COMPLEX [21196]	VIC
Defence - MARIBYRNONG COMPLEX [21220]	VIC
Defence - MARIBYRNONG COMPLEX [21223]	VIC
Defence - MARIBYRNONG COMPLEX [21226]	VIC
Defence - MARIBYRNONG COMPLEX [21221]	VIC
Defence - MARIBYRNONG COMPLEX [21310]	VIC
Defence - MARIBYRNONG COMPLEX [21313]	VIC
Defence - MARIBYRNONG COMPLEX [21311]	VIC
Defence - MARIBYRNONG COMPLEX [21317]	VIC
Defence - MARIBYRNONG COMPLEX [21314]	VIC

Commonwealth Land Name	State
Defence - MARIBYRNONG COMPLEX [21315]	VIC
Defence - MARIBYRNONG COMPLEX [21225]	VIC
Defence - MARIBYRNONG COMPLEX [21341]	VIC
Defence - MARIBYRNONG COMPLEX [21340]	VIC
Defence - MARIBYRNONG COMPLEX [21229]	VIC
Defence - MARIBYRNONG COMPLEX [21228]	VIC
Defence - MARIBYRNONG COMPLEX [21227]	VIC
Defence - MARIBYRNONG COMPLEX [21224]	VIC
Defence - MARIBYRNONG COMPLEX [21140]	VIC
Defence - MARIBYRNONG COMPLEX [21141]	VIC
Defence - MARIBYRNONG COMPLEX [21343]	VIC
Defence - MARIBYRNONG COMPLEX [21342]	VIC
Defence - MARIBYRNONG COMPLEX [21143]	VIC
Defence - MARIBYRNONG COMPLEX [21144]	VIC
Defence - MARIBYRNONG COMPLEX [21142]	VIC
Defence - MARIBYRNONG COMPLEX [21319]	VIC
Defence - MARIBYRNONG COMPLEX [21316]	VIC
Defence - MARIBYRNONG COMPLEX [21318]	VIC
Defence - MARIBYRNONG COMPLEX [21146]	VIC
Defence - MARIBYRNONG COMPLEX [21145]	VIC
Defence - MARIBYRNONG COMPLEX [21148]	VIC
Defence - MARIBYRNONG COMPLEX [21147]	VIC
Defence - MARIBYRNONG COMPLEX [21139]	VIC
Defence - MARIBYRNONG COMPLEX [21173]	VIC
Defence - MARIBYRNONG COMPLEX [21259]	VIC
Defence - MARIBYRNONG COMPLEX [21253]	VIC
Defence - MARIBYRNONG COMPLEX [21252]	VIC

Commonwealth Land Name	State
Defence - MARIBYRNONG COMPLEX [21251]	VIC
Defence - MARIBYRNONG COMPLEX [21250]	VIC
Defence - MARIBYRNONG COMPLEX [21255]	VIC
Defence - MARIBYRNONG COMPLEX [21254]	VIC
Defence - MARIBYRNONG COMPLEX [21189]	VIC
Defence - MARIBYRNONG COMPLEX [21243]	VIC
Defence - MARIBYRNONG COMPLEX [21248]	VIC
Defence - MARIBYRNONG COMPLEX [21249]	VIC
Defence - MARIBYRNONG COMPLEX [21138]	VIC
Defence - MARIBYRNONG COMPLEX [21132]	VIC
Defence - MARIBYRNONG COMPLEX [21130]	VIC
Defence - MARIBYRNONG COMPLEX [21133]	VIC
Defence - MARIBYRNONG COMPLEX [21136]	VIC
Defence - MARIBYRNONG COMPLEX [21131]	VIC
Defence - MARIBYRNONG COMPLEX [21134]	VIC
Defence - MARIBYRNONG COMPLEX [21137]	VIC
Defence - MARIBYRNONG COMPLEX [21257]	VIC
Defence - MARIBYRNONG COMPLEX [21135]	VIC
Defence - MARIBYRNONG COMPLEX [21256]	VIC
Defence - MARIBYRNONG COMPLEX [21300]	VIC
Defence - MARIBYRNONG COMPLEX [21303]	VIC
Defence - MARIBYRNONG COMPLEX [21301]	VIC
Defence - MARIBYRNONG COMPLEX [21309]	VIC
Defence - MARIBYRNONG COMPLEX [21307]	VIC
Defence - MARIBYRNONG COMPLEX [21304]	VIC
Defence - MARIBYRNONG COMPLEX [21308]	VIC
Defence - MARIBYRNONG COMPLEX [21235]	VIC

Commonwealth Land Name	State
Defence - MARIBYRNONG COMPLEX [21234]	VIC
Defence - MARIBYRNONG COMPLEX [21238]	VIC
Defence - MARIBYRNONG COMPLEX [21232]	VIC
Defence - MARIBYRNONG COMPLEX [21239]	VIC
Defence - MARIBYRNONG COMPLEX [21233]	VIC
Defence - MARIBYRNONG COMPLEX [21230]	VIC
Defence - MARIBYRNONG COMPLEX [21231]	VIC
Defence - MARIBYRNONG COMPLEX [21236]	VIC
Defence - MARIBYRNONG COMPLEX [21237]	VIC
Defence - MENIN BARRACKS - MOONEE PONDS [20953]	VIC
Defence - MOORABBIN AERO RESEARCH [20014]	VIC
Defence - Myers Street (opp. Geelong Hospital) [20450]	VIC
Defence - NANGUNIA/CHARSFIELD [20448]	VIC
Defence - Office Accommodation [21419]	VIC
Defence - Office Accommodation [21418]	VIC
Defence - POINT WILSON EXPLOSIVES AREA [21442]	VIC
Defence - POINT WILSON EXPLOSIVES AREA [21443]	VIC
Defence - POINT WILSON EXPLOSIVES AREA [21444]	VIC
Defence - POINT WILSON EXPLOSIVES AREA [21440]	VIC
Defence - POINT WILSON EXPLOSIVES AREA [21439]	VIC
Defence - POINT WILSON EXPLOSIVES AREA [21441]	VIC
Defence - RAAF WILLIAMS - POINT COOK [20013]	VIC
Defence - SANDRINGHAM TRAINING DEPOT [20990]	VIC
Defence - SANDRINGHAM TRAINING DEPOT [20989]	VIC
Defence - Sands & Mcdougall Bldg [21416]	VIC
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21030]	VIC
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21034]	VIC

Commonwealth Land Name	State
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21031]	VIC
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21032]	VIC
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21033]	VIC
Defence - ST KILDA TRAINING DEPOT [20992]	VIC
Defence - STONYHEAD TRAINING AREA [60026]	TAS
Defence - STONYHEAD TRAINING AREA [60025]	TAS
Defence - SWAN ISLAND TRAINING AREA [21448]	VIC
Defence - SWAN ISLAND TRAINING AREA [21447]	VIC
Defence - SWAN ISLAND TRAINING AREA [21446]	VIC
Defence - TRAINING CENTRE (Norris Barracks) - Portsea [21025]	VIC
Defence - TS Leven [60005]	TAS
Defence - TS MELBOURNE ; PT MELBOURNE - NAVY DRILL HALL [21344]	VIC
Defence - WEST HEAD GUNNERY RANGE [21112]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20028]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20023]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20022]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20021]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20020]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20027]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20026]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20025]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20024]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20018]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20019]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20015]	VIC
Defence - WILLIAMS - LAVERTON RAAF BASE [20017]	VIC

Commonwealth Land Name	State
Defence - WILLIAMS - LAVERTON RAAF BASE [20016]	VIC
Unknown	
Commonwealth Land - [60143]	TAS
Commonwealth Land - [60142]	TAS
Commonwealth Land - [60147]	TAS
Commonwealth Land - [60145]	TAS
Commonwealth Land - [60074]	TAS
Commonwealth Land - [60075]	TAS
Commonwealth Land - [21510]	VIC
Commonwealth Land - [60113]	TAS
Commonwealth Land - [60128]	TAS
Commonwealth Land - [60129]	TAS
Commonwealth Land - [21591]	VIC
Commonwealth Land - [21590]	VIC
Commonwealth Land - [60127]	TAS
Commonwealth Land - [60158]	TAS
Commonwealth Land - [60151]	TAS
Commonwealth Land - [60150]	TAS
Commonwealth Land - [60156]	TAS
Commonwealth Land - [60154]	TAS
Commonwealth Land - [60157]	TAS
Commonwealth Land - [60064]	TAS
Commonwealth Land - [60189]	TAS
Commonwealth Land - [60066]	TAS
Commonwealth Land - [21582]	VIC
Commonwealth Land - [21589]	VIC
Commonwealth Land - [60345]	TAS

Commonwealth Land Name	State
Commonwealth Land - [60135]	TAS
Commonwealth Land - [60138]	TAS
Commonwealth Land - [60133]	TAS
Commonwealth Land - [60134]	TAS
Commonwealth Land - [60130]	TAS
Commonwealth Land - [60137]	TAS
Commonwealth Land - [21570]	VIC
Commonwealth Land - [21507]	VIC
Commonwealth Land - [21509]	VIC
Commonwealth Land - [21508]	VIC
Commonwealth Land - [60216]	TAS
Commonwealth Land - [60195]	TAS
Commonwealth Land - [21489]	VIC
Commonwealth Land - [21488]	VIC
Commonwealth Land - [21487]	VIC
Commonwealth Land - [60181]	TAS
Commonwealth Land - [21558]	VIC
Commonwealth Land - [60180]	TAS
Commonwealth Land - [60111]	TAS
Commonwealth Land - [60115]	TAS
Commonwealth Land - [60114]	TAS
Commonwealth Land - [60118]	TAS
Commonwealth Land - [21490]	VIC
Commonwealth Land - [21491]	VIC
Commonwealth Land - [22390]	VIC
Commonwealth Land - [60122]	TAS
Commonwealth Land - [60126]	TAS

Commonwealth Land Name	State
Commonwealth Land - [60124]	TAS
Commonwealth Land - [60125]	TAS
Commonwealth Land - [22391]	VIC
Commonwealth Land - [60112]	TAS
Commonwealth Land - [60206]	TAS
Commonwealth Land - [60205]	TAS
Commonwealth Land - [60209]	TAS
Commonwealth Land - [60169]	TAS
Commonwealth Land - [60167]	TAS
Commonwealth Land - [60168]	TAS
Commonwealth Land - [60148]	TAS
Commonwealth Land - [60164]	TAS
Commonwealth Land - [60161]	TAS
Commonwealth Land - [60165]	TAS
Commonwealth Land - [60162]	TAS
Commonwealth Land - [60163]	TAS
Commonwealth Land - [60160]	TAS
Commonwealth Land - [60179]	TAS
Commonwealth Land - [60178]	TAS
Commonwealth Land - [60173]	TAS
Commonwealth Land - [60177]	TAS

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Historic		
Artillery Orderly Room / Drill Hall	VIC	Listed place
Cape Wickham Lighthouse	TAS	Listed place
Defence Explosive Factory Maribyrnong	VIC	Listed place
Eddystone Lighthouse	TAS	Listed place

Name	State	Status
Flemington Post Office	VIC	Listed place
Fort Gellibrand Commonwealth Area	VIC	Listed place
Fort Queenscliff	VIC	Listed place
Goose Island Lighthouse	TAS	Listed place
HMAS Cerberus Central Area Group	VIC	Listed place
Mersey Bluff Lighthouse	TAS	Listed place
Officers Mess - RAAF Williams Laverton Base	VIC	Listed place
Point Cook Air Base	VIC	Listed place
Point Cook Air Base - College & Training Area	VIC	Within listed place
Point Cook Air Base - Museum & Heritage Precincts	VIC	Within listed place
RAAF Williams Laverton - Eastern Hangars and West Workshops Precincts	VIC	Listed place
Sorrento Post Office	VIC	Listed place
Swan Island Defence Precinct	VIC	Listed place
Swan Island Lighthouse	TAS	Listed place
Table Cape Lighthouse	TAS	Listed place
Wilsons Promontory Lighthouse	VIC	Listed place
Natural		
HMAS Cerberus Marine and Coastal Area	VIC	Listed place
Point Wilson Defence Natural Area	VIC	Listed place
Swan Island and Naval Waters	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
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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]		Breeding likely to occur within area overfly marine 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 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

Scientific Name	Threatened Category	Presence Text
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 subminuta Long-toed Stint [861]		Roosting known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat 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
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

Scientific Name	Threatened Category	Presence Text
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]		Species or species habitat known to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting known to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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	Roosting known to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area
Larus dominicanus Kelp Gull [809]		Breeding known to occur within area
Larus pacificus Pacific Gull [811]		Breeding known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Breeding known to occur within area overfly marine area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting 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	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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
Morus capensis Cape Gannet [59569]		Breeding known to occur within area
Morus serrator Australasian Gannet [1020]		Breeding known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding known to occur within area overfly marine area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route 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

Scientific Name	Threatened Category	Presence Text
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known 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
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
Pelecanoides urinatrix Common Diving-Petrel [1018]		Breeding known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting 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

Scientific Name	Threatened Category	Presence Text
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	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 known to occur within area overfly marine area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sterna striata White-fronted Tern [799]		Breeding known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area
Stiltia isabella Australian Pratincole [818]		Roosting 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

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Breeding known 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
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

Scientific Name	Threatened Category	Presence Text
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 incana as Heteroscelus incanus		
Wandering Tattler [831]		Roosting known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
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

Scientific Name	Threatened Category	Presence Text
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
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 mollisoni Mollison's Pipefish [66260]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
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		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known 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	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

Current Scientific Name	Status	Type of Presence
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
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 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
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
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
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

Current Scientific Name	Status	Type of Presence
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
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

Critical Habitats	[Resource Information]
Name	Type of Presence
Thalassarche cauta (Shy Albatross) - Albatross Island, The Mewstone, Pedra Branca	Listed Critical Habitat

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Apollo	Multiple Use Zone (IUCN VI)
Beagle	Multiple Use Zone (IUCN VI)
Boags	Multiple Use Zone (IUCN VI)

Park Name	Zone & IUCN Categories
Flinders	Multiple Use Zone (IUCN VI)
Beagle	National Park Zone (IUCN II)
Flinders	National Park Zone (IUCN II)
Flinders	National Park Zone (IUCN II)

Extra Information

State and Territory Reserves

[Resource Information]

Protected Area Name	Reserve Type	State
Agnes Falls S.R.	Natural Features Reserve	VIC
Aireys Inlet B.R.	Natural Features Reserve	VIC
Albatross Island	Nature Reserve	TAS
ALBERTON EAST FLORA & FAUNA RESERVE	Nature Conservation Reserve	VIC
Altona Meadows N.F.R	Natural Features Reserve	VIC
Altona N.C.R.	Natural Features Reserve	VIC
Anderson Islands	Conservation Area	TAS
Anglesea B.R.	Natural Features Reserve	VIC
Anser Island	Reference Area	VIC
Ansons Bay	Conservation Area	TAS
Arthur Bay	Conservation Area	TAS
Arthurs Seat	State Park	VIC
Badger Box Creek	Nature Reserve	TAS
Badger Corner	Private Sanctuary	TAS
Badger Head	Conservation Covenant	TAS
Balcombe Creek B.R.	Natural Features Reserve	VIC
Bald Hill N.C.R	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Bald Hills B.R.	Natural Features Reserve	VIC
Balnarring G95 B.R.	Natural Features Reserve	VIC
Barwon Bluff	Marine Sanctuary	VIC
Bass Pyramid	Nature Reserve	TAS
Bass River SS.R.	Natural Features Reserve	VIC
Battery Island	Conservation Area	TAS
Baynes Island	Nature Reserve	TAS
Bay of Fires	Conservation Area	TAS
Bellarine I109 B.R.	Natural Features Reserve	VIC
Bellarine I110 B.R.	Natural Features Reserve	VIC
Bellingham	Conservation Covenant	TAS
Bennison F.F.R.	Nature Conservation Reserve	VIC
Big Bay	Conservation Area	TAS
Big Green Island	Nature Reserve	TAS
Bittern B.R.	Natural Features Reserve	VIC
Black River	Conservation Area	TAS
Black River Bridge	Conservation Area	TAS
Blythe River	Conservation Area	TAS
Blyth Point	Conservation Area	TAS
Boat Harbour Road Killiecrankie	Conservation Covenant	TAS
Boobyalla	Conservation Area	TAS
Boobyalla Park	Conservation Covenant	TAS
Boxen Island	Conservation Area	TAS
Brashton Dairies #1	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Brashton Dairies #2	Conservation Covenant	TAS
Breamlea F.F.R.	Nature Conservation Reserve	VIC
Briant Hill	Nature Recreation Area	TAS
Brick Islands	Conservation Area	TAS
Briddale	Conservation Covenant	TAS
Briggs	Regional Reserve	TAS
Briggs Islet	Conservation Area	TAS
Brougham Sugarloaf	Conservation Area	TAS
Buckley N.C.R.	Natural Features Reserve	VIC
Bull Rock	Conservation Area	TAS
Bunarong N.F.R.	Natural Features Reserve	VIC
Bun Beetons Point	Conservation Area	TAS
Bunurong	Marine National Park	VIC
Cameron	Regional Reserve	TAS
Cape Liptrap Coastal Park	Conservation Park	VIC
Cape Patterson N.C.R	Natural Features Reserve	VIC
Cape Portland	Conservation Area	TAS
Cape Portland	Private Sanctuary	TAS
Cape Wickham	State Reserve	TAS
Cape Wickham	Conservation Area	TAS
Carisbrooke	Conservation Covenant	TAS
Cataraqui Point	Conservation Area	TAS
Cat Island	Conservation Area	TAS
Chalky Island	Conservation Area	TAS
Chappell Islands	Nature Reserve	TAS

Protected Area Name	Reserve Type	State
Chasm Creek	Conservation Area	TAS
Christmas Island	Nature Reserve	TAS
Churchill Island	Marine National Park	VIC
City of Melbourne Bay	Conservation Area	TAS
Clovelly	Conservation Covenant	TAS
Colbert Ck B.R	Natural Features Reserve	VIC
Colliers Forest Reserve	Conservation Covenant	TAS
Colliers Swamp	Conservation Area	TAS
Cone Islet	Conservation Area	TAS
Conewarre K47 SS.R.	Natural Features Reserve	VIC
Conewarre K48 SS.R.	Natural Features Reserve	VIC
Corinella B.R.	Natural Features Reserve	VIC
Corinella Cemetery B.R.	Natural Features Reserve	VIC
Corner Inlet	Marine National Park	VIC
Corner Inlet Marine and Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
Councillor Island	Nature Reserve	TAS
Counsel Hill	Conservation Area	TAS
Craggy Island	Conservation Area	TAS
Crayfish Creek	Regional Reserve	TAS
Crib Point G228 B.R.	Natural Features Reserve	VIC
Crib Point G229 B.R.	Natural Features Reserve	VIC
Currie Lightkeepers Residence	Historic Site	TAS
Curtis Island	Nature Reserve	TAS

Protected Area Name	Reserve Type	State
Darling Range	Conservation Area	TAS
Darriman H29 B.R	Natural Features Reserve	VIC
Devilbend N.F.R.	Natural Features Reserve	VIC
Devils Tower	Nature Reserve	TAS
Dip Range	Regional Reserve	TAS
Disappointment Bay	State Reserve	TAS
Doctors Peak	Regional Reserve	TAS
Doctors Rocks	Conservation Area	TAS
Dolphin Tungsten Mine	Conservation Covenant	TAS
Don Heads	Conservation Area	TAS
Double Sandy Point	Conservation Area	TAS
Doughboy Island	Conservation Area	TAS
Drakes B.R.	Natural Features Reserve	VIC
Drumdlemara H1 B.R	Natural Features Reserve	VIC
Drumdlemara H2 B.R	Natural Features Reserve	VIC
Drumdlemara H4 B.R	Natural Features Reserve	VIC
Duck River	Conservation Area	TAS
Eagle Rock	Marine Sanctuary	VIC
East Kangaroo Island	Nature Reserve	TAS
East Moncoeur Island	Conservation Area	TAS
Eddystone Point Lighthouse	Historic Site	TAS
Edgcumbe Beach	Conservation Area	TAS
Edna Bowman N.C.R.	Natural Features Reserve	VIC
Egg Beach	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Eldorado	Conservation Area	TAS
Emita	Nature Recreation Area	TAS
Emu River	Conservation Area	TAS
Entrance Point	Reference Area	VIC
Esmerelda Enterprises	Conservation Covenant	TAS
Fannys Bay	Conservation Area	TAS
Fingal B.R	Natural Features Reserve	VIC
Five Mile Bluff	Conservation Area	TAS
Flinders G234 B.R.	Natural Features Reserve	VIC
Flinders N.F.R.	Natural Features Reserve	VIC
Foochow	Conservation Area	TAS
Forsyth Island	Conservation Area	TAS
Forwards Beach	Conservation Area	TAS
Fossil Beach G.R.	Natural Features Reserve	VIC
Fossil Bluff	Conservation Area	TAS
Foster Islands	Nature Reserve	TAS
Fotheringate Bay	Conservation Area	TAS
Franklin River SS.R.	Natural Features Reserve	VIC
French Island	National Park	VIC
French Island	Marine National Park	VIC
French Island (east)	Reference Area	VIC
French Island (north)	Reference Area	VIC
French Island G230 B.R	Natural Features Reserve	VIC
Fresh-water Swamp, Woodside Beach W.R	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Gardens Road	Conservation Covenant	TAS
Gees Marsh Rd Bellingham	Conservation Covenant	TAS
Gentle Annie	Conservation Area	TAS
George Rocks	Nature Reserve	TAS
George Town	Conservation Area	TAS
Goose Island	Conservation Area	TAS
Granite Point	Conservation Area	TAS
Grantville B.R	Natural Features Reserve	VIC
Grantville N.C.R	Natural Features Reserve	VIC
Great Musselroe River	Conservation Area	TAS
Great Otway	National Park	VIC
Greens Beach	Conservation Area	TAS
Greens Beach Rd Greens Beach	Conservation Covenant	TAS
Gull Island	Conservation Area	TAS
Harbour Islets	Conservation Area	TAS
Harcus Island	Conservation Area	TAS
Hawley	Nature Reserve	TAS
Heybridge	Conservation Covenant	TAS
Highfield	Historic Site	TAS
Hogan Group	Conservation Area	TAS
Holts Point	Conservation Area	TAS
Honeysuckle Avenue	Conservation Covenant	TAS
Howie Island	Conservation Area	TAS
Humbug Point	Nature Recreation Area	TAS
Hunter Island	Conservation Area	TAS
Hurdy Gurdy Creek N.C.R	Nature Conservation Reserve	VIC

Protected Area Name	Reserve Type	State
Illawong Plains	Conservation Covenant	TAS
Isabella Island	Nature Reserve	TAS
Jack Smith Lake W.R	Natural Features Reserve	VIC
Jacksons Cove	Conservation Area	TAS
Jawbone	Marine Sanctuary	VIC
Jawbone F.F.R.	Nature Conservation Reserve	VIC
Kangaroo Island	Conservation Area	TAS
Kangerong N.C.R	Natural Features Reserve	VIC
Kent Group	National Park	TAS
Kilcunda N.C.R.	Natural Features Reserve	VIC
Killiecrankie	Nature Recreation Area	TAS
King Island - southern titles Area 1	Conservation Covenant	TAS
Kuhns Rd Memana	Conservation Covenant	TAS
Lackrana	Conservation Area	TAS
Lake Connewarre W.R	Natural Features Reserve	VIC
Lake Denison W.R	Natural Features Reserve	VIC
Lake Mikany	Conservation Area	TAS
Lands End	Conservation Covenant	TAS
Lang Lang B.R	Natural Features Reserve	VIC
Laverton Grasslands F.R.	Nature Conservation Reserve	VIC
Lavinia	State Reserve	TAS
Lees Point	Conservation Area	TAS
Lefroy	Regional Reserve	TAS
Leongatha H3 B.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Lighthouse Point	Conservation Area	TAS
Lillico Beach	Conservation Area	TAS
Lily Pond B.R.	Natural Features Reserve	VIC
Limeburners Lagoon (Hovells Creek) F.F.R	Nature Conservation Reserve	VIC
Lime Pit Road	Conservation Area	TAS
Little Boobyalla River	Conservation Area	TAS
Little Chalky Island	Conservation Area	TAS
Little Dog Island	Game Reserve	TAS
Little Forester River	Conservation Covenant	TAS
Little Green Island	Conservation Area	TAS
Little Island	Conservation Area	TAS
Little Peggs Beach	State Reserve	TAS
Little Swan Island	Nature Reserve	TAS
Little Waterhouse Island	Nature Reserve	TAS
Logan Lagoon	Conservation Area	TAS
Logan Lagoon	State Reserve	TAS
Logans Lagoon	Conservation Covenant	TAS
Long Island	Conservation Area	TAS
Lonsdale Lakes W.R	Nature Conservation Reserve	VIC
Low Head	Historic Site	TAS
Low Head	Conservation Area	TAS
Low Islets	Nature Reserve	TAS
Low Point	Conservation Area	TAS
Lyall Road Binalong Bay	Conservation Covenant	TAS
Lyons Cottage	Historic Site	TAS

Protected Area Name	Reserve Type	State
Main Ridge N.C.R.	Natural Features Reserve	VIC
Marriott Reef	Conservation Area	TAS
Marshall Beach	Conservation Area	TAS
Merricks Creek B.R.	Natural Features Reserve	VIC
Mersey Bluff	State Reserve	TAS
Middle Arm	Conservation Area	TAS
Middle Island	Conservation Area	TAS
Mile Island	Conservation Area	TAS
Millwood Road	Conservation Covenant	TAS
Montagu Beach	Conservation Area	TAS
Montagu Island	Conservation Area	TAS
Moriarty Rocks	Nature Reserve	TAS
Mornington Peninsula	National Park	VIC
Mount Martha N.C.R.	Nature Conservation Reserve	VIC
Mount Pearson	State Reserve	TAS
Mount Tanner	Nature Recreation Area	TAS
Mount Vereker Creek	Natural Catchment Area	VIC
Mount William	Conservation Area	TAS
Mount William	National Park	TAS
Muddy Lagoon	Nature Reserve	TAS
Mulligans Hill	Conservation Covenant	TAS
Mulligans Hill	Conservation Area	TAS
Murkay Islets	Conservation Area	TAS
Mushroom Reef	Marine Sanctuary	VIC
Musselroe Bay	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Musselroe Bay	Conservation Covenant	TAS
Narawntapu	National Park	TAS
Neds Reef	Conservation Area	TAS
New Year Island	Game Reserve	TAS
New Zealand Hill F.R.	Nature Conservation Reserve	VIC
Night Island	Conservation Area	TAS
Ninety Mile Beach	Marine National Park	VIC
Ninth Island	Conservation Area	TAS
Nooramunga Marine & Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
NOORAMUNGA STATE FAUNAL RESERVE	Nature Conservation Reserve	VIC
North East Islet	Nature Reserve	TAS
North East River	Game Reserve	TAS
North Scottsdale	Regional Reserve	TAS
North Western Port N.C.R.	Nature Conservation Reserve	VIC
Olivers Creek B.R.	Natural Features Reserve	VIC
Oyster Rocks	Conservation Area	TAS
Painkalac Creek	Reference Area	VIC
Palana Beach	Nature Recreation Area	TAS
Panatana	Conservation Covenant	TAS
Pardoe Northdown	Conservation Area	TAS
Pasco Group	Conservation Area	TAS
Passage Island	Conservation Area	TAS
Patriarchs	Conservation Area	TAS
Patriarchs	Private Sanctuary	TAS

Protected Area Name	Reserve Type	State
Pegarah	Private Nature Reserve	TAS
Pegarah Forest	Conservation Covenant	TAS
Pegarah Rd King Island	Conservation Covenant	TAS
Peggs Beach	Conservation Area	TAS
Penguin Islet	Nature Reserve	TAS
Perkins Island	Conservation Area	TAS
Petrel Islands	Game Reserve	TAS
Phillip Island Nature Park	Other	VIC
Point Addis	Marine National Park	VIC
Point Cooke	Marine Sanctuary	VIC
Point Danger	Marine Sanctuary	VIC
Point Nepean	National Park	VIC
Porky Beach	Conservation Area	TAS
Portarlington (Point Richard) F.F.R.	Nature Conservation Reserve	VIC
Port Phillip Heads	Marine National Park	VIC
Port Sorell	Conservation Area	TAS
Prime Seal Island	Conservation Area	TAS
Queenscliff N.F.R	Natural Features Reserve	VIC
Ram Island	Conservation Area	TAS
Redbanks Sisters Creek	Conservation Covenant	TAS
Redbill Point	Conservation Area	TAS
Red Hill South B.R.	Natural Features Reserve	VIC
Red Hut Point	Conservation Area	TAS
Red Hut Road #1	Conservation Covenant	TAS
Red Hut Road #2	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Reedy Lagoon	Private Nature Reserve	TAS
Reef Island	Conservation Area	TAS
Reef Island and Bass River Mouth N.C.R	Natural Features Reserve	VIC
Reid Rocks	Nature Reserve	TAS
Ricketts Point	Marine Sanctuary	VIC
Ringarooma Tier - Rushy Lagoon	Conservation Covenant	TAS
Rocky Cape	National Park	TAS
Rodondo Island	Nature Reserve	TAS
Rosebud Public Park and Recreation Reserve	Natural Features Reserve	VIC
Roydon Island	Conservation Area	TAS
Rubicon Sanctuary	Conservation Covenant	TAS
Salt Lagoon, St Leonards W.R	Nature Conservation Reserve	VIC
Sandridge	Conservation Covenant	TAS
Screw Creek N.C.R.	Natural Features Reserve	VIC
Sea Elephant	Conservation Area	TAS
Sea Elephant River	Conservation Covenant	TAS
Seaford Wetlands N.F.R.	Natural Features Reserve	VIC
Seagull Islet	Conservation Area	TAS
Seal Islands W.R.	Nature Conservation Reserve	VIC
Seal Rocks	Conservation Area	TAS
Seal Rocks	State Reserve	TAS
Sellars Lagoon	Game Reserve	TAS
Sentinel Island	Conservation Area	TAS
Serendip Wetlands Education Facility	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Settlement Point	Conservation Area	TAS
Shag Lagoon	Conservation Area	TAS
Shakespeare Hills	Regional Reserve	TAS
Shallow Inlet Marine and Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
Shell Islets	Conservation Area	TAS
Single Tree Plain	Conservation Area	TAS
Sister Islands	Conservation Area	TAS
Sisters Beach	Conservation Covenant	TAS
Sisters Island	Conservation Area	TAS
Smithton	Conservation Covenant	TAS
Southern Wilsons Promontory	Remote and Natural Area - Schedule 6, National Parks Act	VIC
South Pats River	Conservation Area	TAS
South Rd Nugara	Conservation Covenant	TAS
Spike Island	Conservation Area	TAS
Stanley	Conservation Area	TAS
Stokes Point	Conservation Area	TAS
Storehouse Island	Conservation Area	TAS
Strzelecki	National Park	TAS
Sugarloaf Rock	Conservation Area	TAS
Summer Camp	Conservation Area	TAS
Summerhill Drive Port Sorell	Conservation Covenant	TAS
Swan Bay - Edwards Point W.R	Nature Conservation Reserve	VIC
Sydney Cove	Historic Site	TAS
Table Cape	State Reserve	TAS
Table Cape	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Tarra Tarra B.R	Natural Features Reserve	VIC
Tarwin Lower F.R.	Nature Conservation Reserve	VIC
Tathams Lagoon	Conservation Area	TAS
Tatlows Beach	Conservation Area	TAS
Tenth Island	Nature Reserve	TAS
The Dock	Conservation Covenant	TAS
The Gurdies N.C.R	Natural Features Reserve	VIC
The Nut	State Reserve	TAS
The Pines F.F.R.	Nature Conservation Reserve	VIC
The Spit W.R.	Nature Conservation Reserve	VIC
Three Hummock Island	State Reserve	TAS
Three Sisters-Goat Island	Nature Reserve	TAS
Trefula	Conservation Covenant	TAS
Trousers Point Beach	Conservation Area	TAS
Truganina South N.C.R.	Nature Conservation Reserve	VIC
Tyabb B.R.	Natural Features Reserve	VIC
Umtali #1	Conservation Covenant	TAS
Umtali #2	Conservation Covenant	TAS
Unnamed (Badger Corner)	Conservation Area	TAS
Unnamed (Badger Head Road)	Conservation Area	TAS
Unnamed (Duck Bay)	Conservation Area	TAS
Unnamed (Fern Glade)	Conservation Area	TAS
Unnamed (Pipers Brook)	Conservation Area	TAS
Unnamed C0293	Private Nature Reserve	VIC

Protected Area Name	Reserve Type	State
Unnamed P0155	Private Nature Reserve	VIC
Vansittart Island	Conservation Area	TAS
Ventnor B.R.	Natural Features Reserve	VIC
Vereker Creek	Reference Area	VIC
Wallaby Islands	Conservation Area	TAS
Waratah B.R	Natural Features Reserve	VIC
Warneet Balaka St B.R.	Natural Features Reserve	VIC
Warneet Iluka St B.R.	Natural Features Reserve	VIC
Warneet N.F.R.	Natural Features Reserve	VIC
Warrengine Creek SS.R.	Natural Features Reserve	VIC
Waterhouse	Conservation Area	TAS
Waterhouse Island	Conservation Area	TAS
Welcome River	State Reserve	TAS
Welshpool H17 B.R	Natural Features Reserve	VIC
West Arm	Conservation Area	TAS
Western Grasslands N.C.R.	Nature Conservation Reserve	VIC
West Inlet	Conservation Area	TAS
West Moncoeur Island	Nature Reserve	TAS
Whipstick Gully N.F.R.	Natural Features Reserve	VIC
White Beach	Conservation Area	TAS
Wicks Road Nugara	Conservation Covenant	TAS
Wild Dog Creek SS.R.	Natural Features Reserve	VIC
Wilsons Promontory	Wilderness Zone	VIC

Protected Area Name	Reserve Type	State
Wilsons Promontory	National Park	VIC
Wilsons Promontory	Marine National Park	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
Wilsons Promontory Marine Reserve	National Parks Act Schedule 4 park or reserve	VIC
Wingaroo	Nature Reserve	TAS
Wongarra B.R.	Natural Features Reserve	VIC
Wonga Wonga South B.R	Natural Features Reserve	VIC
Wonthaggi G237 B.R.	Natural Features Reserve	VIC
Wonthaggi G239 B.R.	Natural Features Reserve	VIC
Wonthaggi G240 B.R.	Natural Features Reserve	VIC
Wonthaggi G241 B.R.	Natural Features Reserve	VIC
Wonthaggi Wetlands Reserve	Natural Features Reserve	VIC
Wright and Egg Islands	Conservation Area	TAS
Wright Rock	Nature Reserve	TAS
Wybalenna Island	Conservation Area	TAS
Yallock-Bulluk Marine and Coastal Park	National Parks Act Schedule 3 Other Parks	VIC
Yambacoona	Conservation Covenant	TAS
Yanakie F.R	Nature Conservation Reserve	VIC
Yaringa	Marine National Park	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
Gippsland RFA	Victoria
Tasmania RFA	Tasmania
West Victoria RFA	Victoria

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Anderson Inlet	VIC
Blackmans Lagoon	TAS
Boulanger Bay - Robbins Passage	TAS
Bungaree Lagoon	TAS
Corner Inlet	VIC
Edithvale-Seaford Wetlands	VIC
Fergusons Lagoon	TAS
Flyover Lagoon 1	TAS
Flyover Lagoon 2	TAS
Hogans Lagoon	TAS
Jack Smith Lake State Game Reserve	VIC
Lake Connewarre State Wildlife Reserve	VIC
Lake Flannigan	TAS
Lavinia Nature Reserve	TAS
Little Thirsty Lagoon	TAS
Little Waterhouse Lake	TAS
Logan Lagoon	TAS
Mud Islands	VIC
Pearshape Lagoon 1	TAS

Wetland Name	State
Pearshape Lagoon 2	TAS
Pearshape Lagoon 3	TAS
Pearshape Lagoon 4	TAS
Point Cook & Laverton Saltworks	VIC
Powlett River Mouth	VIC
Rocky Cape Marine Area	TAS
Sellars Lagoon	TAS
Shallow Inlet Marine & Coastal Park	VIC
Stans Lagoon	TAS
Swan Bay & Swan Island	VIC
Syndicate Lagoon	TAS
Thompsons Lagoon	TAS
Tregaron Lagoons 1	TAS
Tregaron Lagoons 2	TAS
Unnamed wetland	TAS
Unnamed Wetland	TAS
Unnamed Wetland	TAS
Unnamed Wetland	TAS
Unnamed Wetland	TAS
Unnamed Wetland	TAS
Unnamed Wetland	TAS
Unnamed Wetland	TAS
Unnamed Wetland	TAS
Unnamed Wetland	TAS
Unnamed Wetland	TAS
Werribee-Avalon Area	VIC
Western Port	VIC

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Apollo Bay to Skenes Creek Coastal Trail	2022/09274		Assessment
Aurora Green Offshore Wind Farm Preliminary Surveys	2024/09968		Completed
Australian Centre for Disease Preparedness Part life Refit	2023/09497		Completed
Aviators Field Precinct Structure Plan	2020/8786		Completed
Barwon Heads Road Reserve Road to Lower Duneed Road Upgrade Project	2023/09724		Completed
Bass Strait Blue Economy Zone, Marine Aquaculture Trial in Commonwealth Waters	2024/09946		Completed
Bell Bay Wind Farm	2024/09868		Assessment
Blue Mackerel North Offshore Wind Farm Marine Surveys	2024/09934		Completed
Blue Marlin Offshore Wind Energy Project	2023/09532		Completed
City Of Greater Geelong Mosquito Control Program 2021-2030, Vic	2020/8782		Approval
Creamery Road PSP Area Geelong West Property Development	2021/8939		Assessment
Demolition of structures at RAAF Williams - Point Cook	2019/8514		Approval
Dolphin Tungsten Mine Grassy King Island	2023/09653		Referral Decision
Establishment of a 6 turbine windfarm near Wonthaggi	2002/820		Completed
ETP Solar Compensation Wetland	2023/09664		Completed
extension of a sporting facility and upgrading of associated infrastructure	2004/1325		Completed
Geelong Hydrogen Hub	2022/09288		Referral Decision
Gelliondale Wind Farm Project	2023/09577		Assessment

Title of referral	Reference	Referral Outcome	Assessment Status
Gippsland Offshore Wind Farm Marine Survey Investigations	2023/09682		Completed
Gippsland Offshore Wind Transmission 2GW Project	2024/09980		Assessment
Gippsland Regional Port Project	2020/8667		Completed
Gippsland Skies Offshore Wind Project marine surveys (investigations)	2024/09991		Referral Decision
Greater Gippsland Offshore Wind Project	2022/09379		Assessment
Greater Gippsland Offshore Wind Project Initial Marine Field Investigations	2022/09374		Completed
Great Ocean Road Coastal Trail (GORCT) ? Fairhaven to Grey River	2024/10073		Completed
GreenTech Logistics Park	2024/09794		Assessment
Ison Road Rail Overpass Project	2022/09246		Completed
Lawrie Emmins Wetland / Retarding Basin	2022/09250		Assessment
Little River Logistics Precinct	2023/09636		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed
Melbourne Metro Rail Project, Vic	2015/7549		Completed
Moody Street Residential Precinct (West)	2024/10018		Referral Decision
Motorcycle Training and Racing Track	2023/09448		Completed
Navigator North Offshore Wind Farm ? Early Marine Survey Investigations	2024/10093		Referral Decision
North East Wind - construction and operation of wind turbines and associated infrastructure	2022/09388		Assessment
Offshore Tidal Energy Facility and Submarine Cable	2008/4480		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Point Nepean Research & Education Field Station	2024/09963		Completed
Preliminary Site Investigations for Great Eastern Offshore Wind Project	2024/09890		Referral Decision
Proposed residential subdivision and development of 62 Collins Road and 170 Boundary Road Dromana	2025/10100		Assessment
Queen Victoria Market Southern Development project	2024/09860		Approval
Remaining North West Transmission Developments for electricity network	2022/09247		Assessment
Robbins Island Renewable Energy Park, Robbins Island, Tasmania	2017/8096		Approval
Rossiter Park	2023/09694		Assessment
Sassafras - Wesley Vale Irrigation Scheme Augmentation	2023/09666		Assessment
Seadragon Offshore Wind, Early Marine Surveys	2023/09670		Completed
Seadragon Offshore Wind Farm	2022/9163		Completed
Shearwater 2D and 3D marine seismic survey	2005/2180		Completed
SMAP telecommunications submarine cable installation	2024/09989		Completed
Victorian Renewable Energy Terminal	2023/09609		Referral Decision
Vopak Victoria Energy Terminal	2023/09507		Assessment
WestLink Freeway Standard Road Link	2010/5459		Completed
Woolnorth Wind Farm Repowering	2024/09880		Assessment
Controlled action			
'Fairway Waters' Retirement Village, Racecourse Road	2003/1145	Controlled Action	Post-Approval
Alberton Wind Farm, Sth Gippsland, Vic	2017/7854	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Bald Hills Wind Farm 80 Turbines	2002/730	Controlled Action	Post-Approval
Basalt Quarry Extension (Mountainview Quarry)	2004/1329	Controlled Action	Completed
Boundary Road Quarry extension, Dromana, Vic	2018/8221	Controlled Action	Assessment Approach
Bridport Main Road Upgrade	2012/6515	Controlled Action	Completed
Changes in land use at the Western Treatment Plant Werribee, Victoria	2008/4221	Controlled Action	Post-Approval
Construction of a factory for the production of ACV's	2007/3842	Controlled Action	Completed
Construction of NW Homemaker Shopping Centre	2009/4835	Controlled Action	Post-Approval
Crib Point to Pakenham Gas Pipeline, Vic	2018/8297	Controlled Action	Completed
Dairy Farm expansion on the Woolnorth property	2013/6710	Controlled Action	Completed
Develop an Offshore Tidal Energy Facility	2008/4518	Controlled Action	Completed
Development of Shipping Container Storage Facility	2005/2161	Controlled Action	Completed
Edithvale and Bonbeach Level Crossing Removals, Vic	2017/7906	Controlled Action	Post-Approval
Establishment of plantation for use of effluent water	2003/1063	Controlled Action	Completed
Extension of Mountain View basalt quarry by 490 hectares (Stage 2)	2004/1590	Controlled Action	Post-Approval
Frankston Bypass	2007/3480	Controlled Action	Post-Approval
Gas Import Facility, Crib Point, Vic	2018/8298	Controlled Action	Completed
Geelong Salt Fields Urban Renewal Project	2012/6630	Controlled Action	Assessment Approach
Gunns Bleached Kraft Pulp Mill, Longreach (near Bell Bay)	2005/2262	Controlled Action	Completed
Gunns Bleached Kraft Pulp Mill at Long Reach (near Bell Bay) or near Hampshire	2004/1914	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Healesville - Koo Wee Rup Road Upgrade, Vic	2019/8487	Controlled Action	Post-Approval
Industrial Development, 10 Gordon Luck Avenue, Altona, Vic	2017/7914	Controlled Action	Post-Approval
Industrial Development, Burns Road	2004/1820	Controlled Action	Post-Approval
Industrial Development Lot 1 Maidstone Street	2011/6057	Controlled Action	Post-Approval
Industrial development - rail transfer hub, Ajax Road, Altona, Vic	2013/6714	Controlled Action	Completed
Industrial subdivision	2007/3384	Controlled Action	Post-Approval
Industrial subdivision, Lot H, Ajax Road, Altona	2014/7208	Controlled Action	Post-Approval
Industrial Subdivision at 33 Jordan Close	2009/5255	Controlled Action	Post-Approval
Installation of replacement crude-condensate pipeline, Vic	2014/7202	Controlled Action	Post-Approval
Kraft Pulp Mill and ancillary chemical production and infrastructure	2007/3385	Controlled Action	Post-Approval
Laverton activity centre and residential development	2006/2504	Controlled Action	Post-Approval
Lonsdale Golf Club Redevelopment	2003/969	Controlled Action	Post-Approval
Lorne Golf Course redevelopment	2004/1513	Controlled Action	Post-Approval
Low Head Wind Farm, TAS	2012/6450	Controlled Action	Post-Approval
Maintenance Dredging of Toora Boat Ramp Channel	2008/4376	Controlled Action	Completed
Manzeene village residential/commercial subdivision and assoc infrastructure, VIC	2013/6771	Controlled Action	Post-Approval
Melbourne Airport Rail Link - Albion East and West Routes	2001/197	Controlled Action	Post-Approval
Melbourne Airport Rail Link - Broadmeadows Route	2001/196	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Mixed Residential Development, Homestead Road	2006/2819	Controlled Action	Post-Approval
Mordialloc Bypass Project, Vic	2017/8091	Controlled Action	Post-Approval
Mosquito Control	2005/2132	Controlled Action	Post-Approval
Motocross Track and Associated Infrastructure	2009/4956	Controlled Action	Completed
Musselroe Wind Farm	2002/683	Controlled Action	Post-Approval
Nava-1 Cable System	2001/510	Controlled Action	Completed
Pakenham Bypass to South Gippsland Highway	2010/5784	Controlled Action	Post-Approval
Palmers Road Corridor Duplication	2009/4867	Controlled Action	Completed
Peninsula Link Project - construct walking and cycling path through Pines Flora	2009/5100	Controlled Action	Completed
Port Phillip Bay Channel Deepening	2002/576	Controlled Action	Post-Approval
Proposed Industrial Development at Lot A, 650-62 Kororoit Creek, VIC	2012/6420	Controlled Action	Post-Approval
Pruning of Mangrove bushes along Lyall Inlet for hovercraft access, Tooradin Ai	2007/3826	Controlled Action	Completed
Redevelopment of post office and construction of dwellings	2007/3639	Controlled Action	Completed
Regional Rail Link Section 1	2011/6015	Controlled Action	Post-Approval
Removal of the Bellman Hangars Due to Structural Deterioration	2008/4251	Controlled Action	Completed
Replacement of Existing Bayles Bridges 1 and 2 on Koo Wee Rup - Longwarry Road over Yallock Creek	2005/1990	Controlled Action	Post-Approval
Residential and Golf Course Development Project	2003/1144	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Residential Development	2003/1278	Controlled Action	Completed
Residential Development at 170 - 190 Rossiter Rd, 80 & 44 Sybella Ave, Koo Wee Rup	2011/5972	Controlled Action	Post-Approval
Residential Estate, 251-319 Melaluka Rd	2007/3308	Controlled Action	Post-Approval
Residential Subdivision and Stormwater Enhancements for land west of Ash Road	2012/6544	Controlled Action	Completed
Riverwalk Project Residential Development	2006/3176	Controlled Action	Post-Approval
Robbins Island Road to Hampshire Transmission Line	2020/8656	Controlled Action	Referral Decision
Rural residential subdivision into 13 new allotments	2008/4505	Controlled Action	Post-Approval
Sale of Commonwealth land	2004/1711	Controlled Action	Post-Approval
Scoresby Freeway - Monash Freeway to Frankston Freeway	2002/581	Controlled Action	Post-Approval
Star of the South Offshore Wind Farm Project	2020/8650	Controlled Action	Guidelines Issued
Tasmania Natural Gas Project - Stage 2	2001/211	Controlled Action	Post-Approval
Upgrade and expansion of existing Yaringa Boat Harbour	2011/6014	Controlled Action	Post-Approval
Victorian Desalination Project, Bass Coast	2008/3948	Controlled Action	Post-Approval
Viva Energy Gas Terminal Project	2020/8838	Controlled Action	Assessment Approach
Waterhaven Estate I and II residential development (stages 5, 6 and final), P...	2004/1680	Controlled Action	Post-Approval
Water Pipeline	2010/5327	Controlled Action	Post-Approval
Werribee Stone Extraction Project	2010/5347	Controlled Action	Post-Approval
Western Plains wind farm	2010/5712	Controlled Action	Assessment Approach

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Western Treatment Plant Environment Improvement Project (post Effluent Reuse Stage 2)	2002/688	Controlled Action	Post-Approval
White Rock Wind Farm	2003/986	Controlled Action	Completed
Windfarm	2003/1109	Controlled Action	Completed
Wind Farm Construction	2000/12	Controlled Action	Post-Approval
Wind Turbines	2001/439	Controlled Action	Completed
Wyndham Cove marina and residential development	2004/1331	Controlled Action	Post-Approval
Yolla Gas Field (TRL1) Development	2001/321	Controlled Action	Post-Approval
Youth Justice Redevelopment Project, Cherry Creek, 10 kms south west of Werribee, VIC.	2017/8049	Controlled Action	Post-Approval
Not controlled action			
Aboriginal and Historical Cultural Heritage Sub-Surface Testing	2008/4202	Not Controlled Action	Completed
accomodation units and associatedadministration and recreational facilities	2001/430	Not Controlled Action	Completed
Additional Aeration tanks for Eastern Treatment Plant	2007/3229	Not Controlled Action	Completed
Airey Inlet water reclamation plant to Anglesea sewerage system	2006/2539	Not Controlled Action	Completed
Anglesea Mine South Wall Vegetation removal, Anglesea, Vic	2017/8060	Not Controlled Action	Completed
Aquacullture facility for rainbow trout and yabbies and recreational facilities	2002/822	Not Controlled Action	Completed
Barwon Heads Rd gas pipeline installation	2006/2769	Not Controlled Action	Completed
Barwon Heads Stormwater Outfall upgrade, Victoria	2016/7650	Not Controlled Action	Completed
Barwon River Parkland Initiative, Taits Point, Stages 1 and 2	2010/5437	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Bass Basin - Pee Jay-1 - Drilling Program	2007/3908	Not Controlled Action	Completed
Bass Highway Duplication - Ulverstone to Penguin	2003/1301	Not Controlled Action	Completed
Bass Hwy upgrade - Sisters Hills midway between Wynyard and Smithton	2006/3007	Not Controlled Action	Completed
Bed levelling (sweeping and water injection operations)	2011/5978	Not Controlled Action	Completed
Biogas Utilisation Facility	2000/100	Not Controlled Action	Completed
Bluff Heights Estate Stages 2 to 4	2003/1047	Not Controlled Action	Completed
Boneo Park Equestrian Centre	2008/4639	Not Controlled Action	Completed
Bridport Road Upgrade - Maslins to Nourses Road	2006/2553	Not Controlled Action	Completed
Bulban Road Upgrades, Lollypop Creek to Edgars Road, Mambourin	2021/9073	Not Controlled Action	Completed
Capture of Juvenile Tasmanian Devils for Conservation Purposes	2007/3261	Not Controlled Action	Completed
Capture of Tasmanian Devils from Disease-Free Areas	2007/3883	Not Controlled Action	Completed
Communications tower extension	2003/1099	Not Controlled Action	Completed
Construct a Recycled Water Pipeline from Somers Treatment Plant to Blue Scope S	2009/4982	Not Controlled Action	Completed
Construction and operation of Barwon Water biosolids treatment facility	2008/4345	Not Controlled Action	Completed
Construction of 165 Megalitre Dam at "Boobyalla Park"	2004/1428	Not Controlled Action	Completed
Construction of a 275 lot residential subdivision, Truganina, Victoria	2004/1821	Not Controlled Action	Completed
Construction of a Dwelling	2011/6160	Not Controlled Action	Completed
Construction of a flexi mat boat ramp	2011/5838	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Construction of a leachate treatment wetland and treatment discharge, Burnie, Tas	2014/7386	Not Controlled Action	Completed
Construction of a pressure sewer pipeline beneath the Werribee River	2009/4918	Not Controlled Action	Completed
Construction of Barwon Heads Bridge	2005/2375	Not Controlled Action	Completed
Construction of Infrastructure to Extract, Treat & Transfer Groundwater to Wurde	2008/4104	Not Controlled Action	Completed
Construction of Overtaking Lanes on Great Ocean Rd	2008/4044	Not Controlled Action	Completed
construction of pump station for pump diversion from the Barham River	2003/1242	Not Controlled Action	Completed
Construction of the Edgars Road Extension, from Childs Road, Lalor to Cooper Street, Epping	2003/1135	Not Controlled Action	Completed
Conversion of the North Western Victoria rail system from broad gauge to standar	2002/657	Not Controlled Action	Completed
Cowes Primary School Gymnasium	2020/8683	Not Controlled Action	Completed
Creation of a habitat sanctuary at 550 Manks Road, Tooradin, VIC	2013/6845	Not Controlled Action	Completed
Dandenong Southern Bypass	2005/2271	Not Controlled Action	Completed
Desludging and Reinstatement of Lagoons at Altona Treatment Plant	2006/3166	Not Controlled Action	Completed
develop 8.37 ha industrial subdivision	2005/2190	Not Controlled Action	Completed
Development of a Rail Freight Hub and Inland Container Port	2006/3101	Not Controlled Action	Completed
Development of Pt Nepean Quarantine Station (former) National Centre for Coasts and Climate	2008/4653	Not Controlled Action	Completed
development of retirement resort	2004/1828	Not Controlled Action	Completed
Development of service station and restaurant Tooradin, Victoria	2013/6936	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Development of Turrum Oil Field and associated infrastructure	2003/1204	Not Controlled Action	Completed
Dial Blythe Irrigation Scheme, north-west Tasmania	2013/7058	Not Controlled Action	Completed
Dingley Route Freeway Construction	2001/256	Not Controlled Action	Completed
Divestment of Norris Barracks	2003/963	Not Controlled Action	Completed
Drainage Alignment Works	2010/5399	Not Controlled Action	Completed
Duck Irrigation System, north-west coast Tasmania	2016/7778	Not Controlled Action	Completed
East West Link Project, Eastern Section, Vic	2013/6801	Not Controlled Action	Completed
Edithvale Wetlands Bird Hide Repairs, VIC	2011/5926	Not Controlled Action	Completed
Effluent Reuse Stage 2	2001/273	Not Controlled Action	Completed
Enviro Altona Project - Upgrade of City West Water's Treatment Plant Facility	2003/968	Not Controlled Action	Completed
Erosion Trials - planting and pile program of >300 mangroves	2006/2856	Not Controlled Action	Completed
Expansion and upgrade of Biogas Utilisation Facilities at the Western Treatment	2005/2183	Not Controlled Action	Completed
Expansion of the Candowie Reservoir and associated revegetation works	2012/6317	Not Controlled Action	Completed
Exploration Drilling Well Trefoil-1	2003/1058	Not Controlled Action	Completed
Extension of Mountain View basalt quarry by 113 hectares (stage one)	2004/1591	Not Controlled Action	Completed
Fabrication and Spooling of Pipe Strings at Crib Point	2008/4127	Not Controlled Action	Completed
Federation Trail	2001/451	Not Controlled Action	Completed
Ferry Service Infrastructure Development	2001/269	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Flemington Racecourse - grandstand & associated works, Melbourne Vic	2014/7168	Not Controlled Action	Completed
Flinders Backlog Sewer Project	2005/2275	Not Controlled Action	Completed
Floating Observation Platform, Tooradin Channel	2006/2766	Not Controlled Action	Completed
Geelong Bypass Sections 1 & 2	2005/2097	Not Controlled Action	Completed
Gippsland Basin Seismic Programme	2004/1866	Not Controlled Action	Completed
Golflinks Road Residential Development & Water Storage Facility at Barwon Heads	2004/1793	Not Controlled Action	Completed
Grahams Reserve Landscaping & Rehabilitation Program	2003/955	Not Controlled Action	Completed
Grahams Reserve Weed and Pest Animal Control Program	2002/625	Not Controlled Action	Completed
Grahams Wetland Reserve walking bay trail connection, south of Werribee, Vic	2013/7097	Not Controlled Action	Completed
Grevillea infecunda tip cuttings and soil samples	2005/1979	Not Controlled Action	Completed
Hayes Hill Ridge Wind Farm	2007/3437	Not Controlled Action	Completed
High Street Road Upgrade	2001/268	Not Controlled Action	Completed
Huxley Hill Wind Farm expansion	2005/2499	Not Controlled Action	Completed
Huxley Hill Wind Farm Expansion	2002/570	Not Controlled Action	Completed
Illuka Residential Estate	2007/3224	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Industrial Development, Burns Road, Marshall Court	2004/1901	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Industrial Development 39-43 Marshall Court, Altona, VIC	2018/8267	Not Controlled Action	Completed
Installation of a 3.5kW Wind Turbine	2012/6604	Not Controlled Action	Completed
Installation of a 35 metre telecommunications facility at Jirrahlinga Animal San	2003/1151	Not Controlled Action	Completed
Installation of optic fibre cable from Inverloch, Victoria to Stanley, Tasmania	2002/906	Not Controlled Action	Completed
install reycled water pipeline Ballarto Rd	2005/2300	Not Controlled Action	Completed
Kipper Tuna Turrum Project Maintenance Dredging	2010/5430	Not Controlled Action	Completed
Laverton Recreation Reserve Stormwater Harvesting Scheme, VIC	2012/6513	Not Controlled Action	Completed
Maintenance and priority works to heritage buildings at Point Nepean Quarantine	2006/3151	Not Controlled Action	Completed
Maintenance dredging of Yaringa Channel	2004/1360	Not Controlled Action	Completed
Maintenance Dredging South Channel 2012	2011/6198	Not Controlled Action	Completed
Maintenance works at Barwon Heads Bridge	2003/1199	Not Controlled Action	Completed
Marine and Freshwater Resources Institute (MAFRI) Facility	2000/121	Not Controlled Action	Completed
Melbourne Airport Rail Project	2021/9040	Not Controlled Action	Completed
Merricks Beach Backlog Sewer Project	2010/5300	Not Controlled Action	Completed
Millwood Road Gravel Quarry	2002/602	Not Controlled Action	Completed
Mixed use residential development (Camdale Development)	2006/2634	Not Controlled Action	Completed
Modifications to Laverton Wetland inflow & outflow structures	2009/5249	Not Controlled Action	Completed
Mordialloc Creek Wetland Lot 4 Governor Road Braieside	2010/5654	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Mornington Tyabb Recycled Water Project	2009/4928	Not Controlled Action	Completed
Multi-species Aquaculture Enterprise	2001/404	Not Controlled Action	Completed
Newhaven Yacht Squadron marina extension	2004/1450	Not Controlled Action	Completed
New Water Infrastructure Upgrade, Grassy Dam, King Island	2013/6882	Not Controlled Action	Completed
Northern Sewerage Project stages 1 & 2	2006/2875	Not Controlled Action	Completed
Ocean Grove rising main 2 upgrade	2009/4978	Not Controlled Action	Completed
Ocean Grove Rising Main 2 Upgrade (OGRM2) - East Section & River Crossing	2010/5508	Not Controlled Action	Completed
Optic fibre cable installation - San Remo to Cowes	2005/2386	Not Controlled Action	Completed
Palmers Road Rail Overpass and Bridge Works	2010/5738	Not Controlled Action	Completed
Pipeline easement regrowth removal	2011/5817	Not Controlled Action	Completed
Pipeline to transport recycled waste water	2002/646	Not Controlled Action	Completed
Point Cooke Coastal Trail	2001/324	Not Controlled Action	Completed
Point Cooke recreational trail Stage 2	2002/593	Not Controlled Action	Completed
Point Nepean Quarantine Station (former)/Restoration of Medical Superintendent's	2006/3149	Not Controlled Action	Completed
Port Latta Wind Farm, Tas	2018/8249	Not Controlled Action	Completed
Port Phillip Channel Deepening Project - Trial Dredge Program	2005/2164	Not Controlled Action	Completed
Port Welshpool Harbour Dredging	2007/3521	Not Controlled Action	Completed
Power Station	2001/239	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Proposed replacement of existing road culvert	2013/7077	Not Controlled Action	Completed
Proposed sale of ABC Production Support Facilities, Elsternwick, VIC	2017/7859	Not Controlled Action	Completed
Proposed sale of ABC Studios, 8 Gordon Street, Elsternwick, Vic	2018/8307	Not Controlled Action	Completed
Queenscliff Harbour Redevelopment	2004/1352	Not Controlled Action	Completed
Racecourse Road Culvert and Ford Crossing	2022/9158	Not Controlled Action	Completed
Redevelopment of Royal Melbourne Yacht Squadron Jetty	2006/2619	Not Controlled Action	Completed
refurbishment works to Badcoe Hall, Pt Neapean Quarantine Station (former)	2006/3152	Not Controlled Action	Completed
Regional Fast Rail Project - Geelong Country Works Package	2002/577	Not Controlled Action	Completed
Rehabilitation of Lake Connewarre State Game Reserve	2002/708	Not Controlled Action	Completed
Reinstate rail link between Footscray Rd and Webb Dock	2004/1438	Not Controlled Action	Completed
Relocation works of the Yarra services	2003/1298	Not Controlled Action	Completed
Remedial Works to the Swan Island Bridge	2003/1129	Not Controlled Action	Completed
Removal of Sludge to Produce Dried Biosolids, Western Treatment Plant	2002/890	Not Controlled Action	Completed
Removal of Strzelecki Gum as part of the Regional Fast Rail Project	2006/2936	Not Controlled Action	Completed
Removal of Strzelecki gums	2013/6959	Not Controlled Action	Completed
Replacement Culvert crossing in Boggy Creek and Removal of Existing Culvert Crossing	2009/5131	Not Controlled Action	Completed
Replacement of Four Bridges on Manks Road	2009/5106	Not Controlled Action	Completed
Replacement of sewer pipelines	2002/623	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Residential Development, 409 The Esplanade, St Leonards	2006/2950	Not Controlled Action	Completed
Residential development 360-438 Point Cook Road, Point Cook, Vic	2014/7381	Not Controlled Action	Completed
Residential Dwelling	2004/1896	Not Controlled Action	Completed
Restricted Recreation Facility - soccer pich, stadium and associated parking	2006/3034	Not Controlled Action	Completed
Rotary peeled veneer mill and timber merchandising yard	2002/564	Not Controlled Action	Completed
Sanctuary Lakes Recycled Water Main between Altona Treatment Plant to the Sanctu	2007/3645	Not Controlled Action	Completed
Sludge handling and biosolids management - Western Treatment Plant	2006/2620	Not Controlled Action	Completed
Sparrovale Wetland stormwater management, Armstrong Creek and Charlemont, VIC	2018/8375	Not Controlled Action	Completed
Spikey Beach 1, West Triton Drilling Program, Bass Basin Permit T/38P	2007/3914	Not Controlled Action	Completed
St Andrews Field Residential Development & Infrastructure	2004/1468	Not Controlled Action	Completed
St Quentin Consulting Pty Ltd /Residential development/305 Great Ocean Road, Jan Juc/VIC/Development	2014/7184	Not Controlled Action	Completed
Subdivision for Residential development	2004/1823	Not Controlled Action	Completed
subdivision of 195ha into industrial allotments	2005/2048	Not Controlled Action	Completed
Subdivision of 68 ha into two blocks, construction of access road and house site	2004/1531	Not Controlled Action	Completed
Suburban Rail Loop East	2021/9101	Not Controlled Action	Completed
Telstra optic fibre cable across Bass Strait - Sub bottom profiler Surve	2002/779	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Tenby Point Sewerage Pipeline	2001/406	Not Controlled Action	Completed
The 3000 Acres, clearing and development of native vegetation	2006/3199	Not Controlled Action	Completed
The Development of Werribee River Regional Park	2009/5246	Not Controlled Action	Completed
To construct a shared trail within the Arthurs Seat Road, road reserve south side from Mornington Fl	2004/1565	Not Controlled Action	Completed
Torquay Sewerage Strategy - pipe replacement between Torquay and the Black Rock	2004/1704	Not Controlled Action	Completed
To undertake maintenance dredging of the Toora Boat Ramp Channel, VIC	2014/7225	Not Controlled Action	Completed
Transfer of 90ha Point Nepean Quarantine Station from Commonwealth to Victorian	2008/4521	Not Controlled Action	Completed
Upgrade and Repairs to Flinders Pier	2008/4331	Not Controlled Action	Completed
Upgrade of existing access track	2011/5933	Not Controlled Action	Completed
Upgrade of existing railway infrastructure	2002/697	Not Controlled Action	Completed
Upgrade of railway between Laverton Station and Altona Loop	2008/4677	Not Controlled Action	Completed
Upgrade of the existing Thornhill St Sewer Pump Station	2010/5618	Not Controlled Action	Completed
Upgrade to Eastern Treatment Plant	2010/5376	Not Controlled Action	Completed
Venus Bay Outfall Extension	2004/1555	Not Controlled Action	Completed
Wastewater Treatment System Upgrade	2004/1420	Not Controlled Action	Completed
Wells Road water main	2006/3206	Not Controlled Action	Completed
Werribee Open Range Zoo - Werribee River Crossing Upgrade	2012/6540	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Western Distributor Project Melbourne, Vic	2015/7620	Not Controlled Action	Completed
Western Treatment Plant Groyne and Beach Works	2001/185	Not Controlled Action	Completed
Western Treatment Plant Stage 2 Augmentation Project, Werribee, Vic	2015/7515	Not Controlled Action	Completed
West Triton Drilling Program - Gippsland Basin	2007/3915	Not Controlled Action	Completed
West Werribee Dual Water Supply Scheme - Stage One	2010/5743	Not Controlled Action	Completed
Williams Landing Railway Station Development	2010/5464	Not Controlled Action	Completed
Wooralla Drive pump station, pipeline and associated works	2005/2450	Not Controlled Action	Completed
WTP 115E Lagoon Seawall, Western Treatment Plant WTP, Werribee Victoria	2019/8577	Not Controlled Action	Completed
WTP Effluent Discharge Improvement Works (Multiple Outlets), Werribee, Vic	2015/7619	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Waterhaven Estate' Residential Development (Stages 3 & 4)	2003/1149	Not Controlled Action (Particular Manner)	Post-Approval
205W Sludge Drying Pan Refurbishment, Melbourne Water Western Treatment Plant, Vic	2013/6939	Not Controlled Action (Particular Manner)	Post-Approval
2D & 3D seismic survey T/39P	2005/2237	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2005/2295	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Aquisition Survey	2008/4041	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey	2008/4066	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		(Particular Manner)	
3D Marine Seismic Survey within Torquay Sub-basin off sthn Victoria	2012/6256	Not Controlled Action (Particular Manner)	Post-Approval
Apache 3D seismic exploration survey	2006/3146	Not Controlled Action (Particular Manner)	Post-Approval
Aroo Chappell 3D seismic survey	2010/5701	Not Controlled Action (Particular Manner)	Post-Approval
Barwon Heads Rising Main No.11 Sewerage Pipe Upgrade	2008/4091	Not Controlled Action (Particular Manner)	Post-Approval
Bass Basin 2D and 3D seismic surveys (T/38P & T/37P)	2007/3650	Not Controlled Action (Particular Manner)	Post-Approval
Bass Coast, South Gippsland and Cardinia Shires, Gas Pipeline and Lang Lang Offtake and City Gate St	2006/2867	Not Controlled Action (Particular Manner)	Post-Approval
Bitumen Storage Facility	2007/3676	Not Controlled Action (Particular Manner)	Post-Approval
Bream 3D seismic survey	2006/2556	Not Controlled Action (Particular Manner)	Post-Approval
Class C Recycled Water Supply Reliabilty Improvement at Western Treatment Plant	2011/5921	Not Controlled Action (Particular Manner)	Post-Approval
Construct 500Ml in-stream dam, Boobyalla Park	2007/3927	Not Controlled Action (Particular Manner)	Post-Approval
construction of 22 dwellings on approximatley 1.2ha at Austin Rd.	2004/1932	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Construction of bridge across Barwon River	2006/2947	Not Controlled Action (Particular Manner)	Post-Approval
Construction of Stormwater Harvesting Dam, Anakie Road, Lovely Banks VIC	2009/5001	Not Controlled Action (Particular Manner)	Post-Approval
Construction of wharf	2003/1050	Not Controlled Action (Particular Manner)	Post-Approval
Construct private dwelling	2008/4234	Not Controlled Action (Particular Manner)	Post-Approval
Construct single dwelling	2008/4504	Not Controlled Action (Particular Manner)	Post-Approval
Controlled Burn, Understorey Clearance and Removal of UXO	2003/1030	Not Controlled Action (Particular Manner)	Post-Approval
Corio Bay Channel Safety Adjustment Program	2011/6208	Not Controlled Action (Particular Manner)	Post-Approval
Dalrymple 3D Seismic Survey	2010/5680	Not Controlled Action (Particular Manner)	Post-Approval
Deepwater Sorell Basin 2001 Non-Exclusive 2D Seismic Survey	2001/156	Not Controlled Action (Particular Manner)	Post-Approval
development of retirement village, Bellarine Lakes Golf Course, Bellarine Hwy	2006/3015	Not Controlled Action (Particular Manner)	Post-Approval
Drainage, Trenching & Cable Laying as Part of the Regional Fast Rail Project	2003/1133	Not Controlled Action (Particular Manner)	Post-Approval
Edithvale-Seaford Wetlands Discovery Centre	2007/3218	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Exploration drilling of the Craigow-1 and Tolpuddle-1 wells	2010/5725	Not Controlled Action (Particular Manner)	Post-Approval
Extension and upgrade of Langwarrin Hotel carpark, Langwarrin, Vic	2013/6917	Not Controlled Action (Particular Manner)	Post-Approval
Fuelbreak construction	2009/4915	Not Controlled Action (Particular Manner)	Post-Approval
Gas Pipeline	2006/3093	Not Controlled Action (Particular Manner)	Post-Approval
Geelong Bypass Section 3	2005/2099	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
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
Installation of a 17x6m floating pontoon adjacent to existing boat ramp	2009/4842	Not Controlled Action (Particular Manner)	Post-Approval
Kindred North Motton Irrigation Scheme (KNMIS), TAS	2012/6401	Not Controlled Action (Particular Manner)	Post-Approval
Koo Wee Rup Supply Main and Reticulation Project, Vic	2015/7413	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Labatt 3D Seismic Survey T/47P Bass Strait	2007/3759	Not Controlled Action (Particular Manner)	Post-Approval
Maintenance dredging of 150,000 cubic metres of sediment in Burnie Port and du	2004/1569	Not Controlled Action (Particular Manner)	Post-Approval
Maintenance Dredging Program	2009/4953	Not Controlled Action (Particular Manner)	Post-Approval
Maintenance Dredging Program 2012-21 in Port of Melbourne	2012/6332	Not Controlled Action (Particular Manner)	Post-Approval
McKenzie St Sewer Rising Main Realignment and Replacement	2009/4809	Not Controlled Action (Particular Manner)	Post-Approval
Northern Fields 3D Seismic Survey	2001/140	Not Controlled Action (Particular Manner)	Post-Approval
Origin Energy Silvereye-1 Exploration Drilling Programme	2010/5702	Not Controlled Action (Particular Manner)	Post-Approval
OTE10 2D Marine Seismic Survey	2009/5223	Not Controlled Action (Particular Manner)	Post-Approval
Peninsula Link Project - walking and cycling path along Seaford wetlands area	2009/5099	Not Controlled Action (Particular Manner)	Post-Approval
Point Cook Coastal Park Bay Trail Construction (Stage 3, nth part)	2008/4023	Not Controlled Action (Particular Manner)	Post-Approval
Point Wilson Explosives Area Waterside Infrastructure Remediation	2012/6376	Not Controlled Action (Particular Manner)	Post-Approval
Port Capacity Project - Webb Dock Development VIC	2012/6635	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Rail Upgrades at Geelong Port Project	2010/5363	Not Controlled Action (Particular Manner)	Post-Approval
Recycled water main from Altona Treatment Plant to the Qenos Olefins Manuf. Plan	2009/4923	Not Controlled Action (Particular Manner)	Post-Approval
Regional Fibre Optic Project (RFOP)	2003/978	Not Controlled Action (Particular Manner)	Post-Approval
Regional Fibre Optic Project (RFOP)	2003/913	Not Controlled Action (Particular Manner)	Post-Approval
Removal of Tasmanian blue gums	2004/1356	Not Controlled Action (Particular Manner)	Post-Approval
Remove silt build up on existing swales around the perimeter of the Three Hummo	2010/5676	Not Controlled Action (Particular Manner)	Post-Approval
Residential subdivision, 2 Pindara Boulevard, Langwarrin, Vic	2014/7300	Not Controlled Action (Particular Manner)	Post-Approval
Residential Subdivision and Creation of a Drainage Reserve	2012/6505	Not Controlled Action (Particular Manner)	Post-Approval
Rockhopper-1 and Trefoil-2 Exploration Drilling in Permit Area T/18P	2009/4776	Not Controlled Action (Particular Manner)	Post-Approval
Scottsdale Irrigation Scheme (SIS) - Tasmania	2017/7981	Not Controlled Action (Particular Manner)	Post-Approval
Seaford Wetlands Hydrology Works	2012/6678	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Seismic Survey	2001/206	Not Controlled Action (Particular Manner)	Post-Approval
Silvereye 3D Seismic Survey	2007/3551	Not Controlled Action (Particular Manner)	Post-Approval
Southern Flanks 2D Marine Seismic Survey	2010/5288	Not Controlled Action (Particular Manner)	Post-Approval
Tap Oil Ltd Molson 2D Seismic Survey T47P	2008/3967	Not Controlled Action (Particular Manner)	Post-Approval
Torquay Sub-basin (VIC/P62) OTE12-3D Seismic Survey	2012/6655	Not Controlled Action (Particular Manner)	Post-Approval
Trial Growing Mullet in Western Treatment Plant Sewage Ponds	2009/4812	Not Controlled Action (Particular Manner)	Post-Approval
Upgrade of capacity and supporting infrastructure, Western Treatment Plant	2009/5036	Not Controlled Action (Particular Manner)	Post-Approval
Western Lagoon Saltmarsh Restoration, Western Teatment Plant, Werribee, VIC	2009/4831	Not Controlled Action (Particular Manner)	Post-Approval
Western Treatment Plant Stage 1 Augmentation, Werribee, Vic	2014/7313	Not Controlled Action (Particular Manner)	Post-Approval
Westpoint Business Park	2001/191	Not Controlled Action (Particular Manner)	Post-Approval
Wilson's Creek Bridge Replacement, Bass Highway	2007/3892	Not Controlled Action (Particular Manner)	Post-Approval
Windsor Park Residential Development	2001/272	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Referral decision			
'Waterhaven Estate' residential development (final stage)	2004/1607	Referral Decision	Completed
3D Marine Seismic Survey	2011/6156	Referral Decision	Completed
All actions taken in response to the current severe bushfires in Victoria.	2009/4787	Referral Decision	Completed
Alteration Reconstruction Restoration and Repairs to Buildings	2008/4179	Referral Decision	Completed
Car-park upgrade, Langwarin Hotel, Langwarin, Vic	2015/7498	Referral Decision	Completed
Construction of an upgraded drainage outfall within an area known as Reserve C	2013/6808	Referral Decision	Completed
Darymple 3D Seismic Survey, Petroleum Exploration Permit T/41P	2010/5322	Referral Decision	Completed
Industrial Development: 39-58 Marshall Court, Altona North, VIC	2018/8154	Referral Decision	Completed
McKenzie St Sewer Rising Main Realignment and Construction	2008/3968	Referral Decision	Completed
Mineral Exploration Ringarooma Bay	2012/6508	Referral Decision	Completed
Proposed land subdivision for industrial development	2009/4943	Referral Decision	Completed
Rail Transfer Hub and Industrial Development, Ajax Rd	2012/6546	Referral Decision	Completed
Residential Development Elizabeth Avenue, Rosebud West, VIC	2015/7603	Referral Decision	Completed
Royal Yacht Club of Victoria Marina Expansion	2012/6674	Referral Decision	Completed
Stages 5 and 6 of a 278 Lot residential subdivision at lot 5 Sayers Road Truganina, Victoria	2011/6128	Referral Decision	Completed
Upgrade of Services Infrastructure Point Nepean Quarantine Station	2008/4591	Referral Decision	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
Williams Landing Reserves A and B Infill Project, Melbourne, Vic	2018/8248	Referral Decision	Completed
Works to the buildings and surrounds at the former Point Nepean Quarantine Stati	2008/4156	Referral Decision	Completed

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known 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
Morus serrator Australasian Gannet [1020]	Aggregation	Known to occur
Morus serrator Australasian Gannet [1020]	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]	Breeding	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Breeding	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Likely to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Known to occur
Sterna striata White-fronted Tern [799]	Breeding	Known to occur
Sterna striata White-fronted Tern [799]	Foraging	Known to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Breeding	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

Scientific Name	Behaviour	Presence
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur

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 is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Jul-2025

[Summary](#)
[Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)
[Acknowledgements](#)

Figure: Gippsland Environmental Sector

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	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	13
Listed Threatened Species:	140
Listed Migratory Species:	76

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:	16
Commonwealth Heritage Places:	2
Listed Marine Species:	119
Whales and Other Cetaceans:	33
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	7
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:	64
Regional Forest Agreements:	4
Nationally Important Wetlands:	29
EPBC Act Referrals:	110
Key Ecological Features (Marine):	5
Biologically Important Areas:	38
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
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)

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
Araluen Scarp Grassy Forest	Endangered	Community may occur within area
Brogo Vine Forest of the South East Corner Bioregion	Endangered	Community likely to occur within area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to 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
Illawarra and south coast lowland forest and woodland ecological community	Critically Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
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 likely to 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
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
Aphelocephala leucopsis		
Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Breeding known 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

Scientific Name	Threatened Category	Presence Text
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
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
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to 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

Scientific Name	Threatened Category	Presence Text
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
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
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to 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 likely to 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
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Breeding known to occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour 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 known 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 albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
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

Scientific Name	Threatened Category	Presence Text
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
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
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 likely to occur within area
Galaxias terenasus		
Roundsnout Galaxias [87175]	Endangered	Species or species habitat may occur within area
Galaxiella pusilla		
Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Endangered	Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text
Mordacia praecox		
Non-parasitic Lamprey, Precocious Lamprey [81530]	Endangered	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
Seriolella brama		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
Heleioporus australiacus flavopunctatus		
Southern Owl Frog, Southern Giant Burrowing Frog [92014]	Endangered	Species or species habitat known 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 known to occur within area
Mixophyes balbus		
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may 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 may 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 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
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat may 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
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
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may 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 known to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
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	Roosting 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 constablei Narrabarba Wattle [10798]	Critically Endangered	Species or species habitat known to occur within area
Acacia georgensis Bega Wattle [9848]	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 known to occur within area
Astrotricha crassifolia Thick-leaf Star-hair [10352]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Astrotricha sp. Howe Range (D.E.Albrecht 1054)		
Long-leaf Star-hair [85676]	Critically Endangered	Species or species habitat known 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 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
Correa baeuerlenii		
Chef's Cap [17007]	Vulnerable	Species or species habitat known to occur within area
Correa lawrenceana var. genoensis		
Genoa River Correa [66626]	Endangered	Species or species habitat may occur within area
Corunastylis rhyolitica listed as Genoplesium rhyoliticum		
Pambula Midge-orchid, Rhyolite Midge Orchid [78697]	Endangered	Species or species habitat likely to occur within area
Corunastylis vernalis listed as Genoplesium vernale		
East Lynne Midge-orchid [78699]	Vulnerable	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
Deyeuxia ramosa		
Climbing Bent-grass [87970]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Dianella amoena Matted Flax-lily [64886]	Endangered	Species or species habitat likely to occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus stenostoma Jillaga Ash [3976]	Endangered	Species or species habitat may occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area
Leionema ralstonii [64926]	Vulnerable	Species or species habitat likely to 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 known to occur within area
Pomaderris cotoneaster Cotoneaster Pomaderris [2043]	Endangered	Species or species habitat may occur within area
Pomaderris parrisiae Parris' Pomaderris [22119]	Vulnerable	Species or species habitat known 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

Scientific Name	Threatened Category	Presence Text
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Prostanthera galbraithiae Wellington Mintbush [64959]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat likely to occur within area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	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
Spyridium cinereum Tiny Spyridium [13564]	Endangered	Species or species habitat known 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]	Endangered	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area
Westringia davidii [19079]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Xerochrysum palustre		
Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat known to occur within area
Zieria tuberculata		
Warty Zieria [56736]	Vulnerable	Species or species habitat known to occur within area
REPTILE		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely 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
Lissolepis coventryi		
Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
SHARK		
Carcharias taurus (east coast population)		
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Congregation or aggregation known to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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		
Anous stolidus		
Common Noddy [825]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Ardenna pacifica		
Wedge-tailed Shearwater [84292]		Breeding known 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

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
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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 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
Migratory Marine Species		
Balaenoptera bonaerensis		
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	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
Carcharias taurus		
Grey Nurse Shark [64469]		Congregation or aggregation known to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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]		Foraging, feeding or related behaviour known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
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		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
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

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
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
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
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
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Pandion haliaetus		
Osprey [952]		Species or species habitat known to occur within area
Thalasseus bergii		
Greater Crested Tern [83000]		Breeding known to occur within area
Tringa brevipes		
Grey-tailed Tattler [851]		Foraging, feeding or related behaviour known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat 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
Communications, Information Technology and the Arts - Australian Postal Corporation	
Commonwealth Land - Australian Postal Commission [12052]	NSW
Communications, Information Technology and the Arts - Telstra Corporation Limited	
Commonwealth Land - Australian Telecommunications Commission [12265]	NSW
Commonwealth Land - Australian Telecommunications Commission [12053]	NSW
Commonwealth Land - Australian Telecommunications Commission [12050]	NSW
Commonwealth Land - Australian Telecommunications Commission [16089]	NSW
Commonwealth Land - Australian Telecommunications Commission [15611]	NSW
Commonwealth Land - Australian Telecommunications Commission [15461]	NSW
Commonwealth Land - Australian Telecommunications Commission [12014]	NSW
Commonwealth Land - Telstra Corporation Limited [12051]	NSW

Commonwealth Land Name	State
Commonwealth Land - Telstra Corporation Limited [15888]	NSW
Unknown	
Commonwealth Land - [21497]	VIC
Commonwealth Land - [12046]	NSW
Commonwealth Land - [12045]	NSW
Commonwealth Land - [12047]	NSW
Commonwealth Land - [21498]	VIC
Commonwealth Land - [21496]	VIC

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Gabo Island Lighthouse	VIC	Listed place
Montague Island Lighthouse	NSW	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may 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	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known 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
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 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

Scientific Name	Threatened Category	Presence Text
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 ruficapillus Red-capped Plover [881]		Roosting 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
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may 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
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
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		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

Scientific Name	Threatened Category	Presence Text
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding known to occur within area
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
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within 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 known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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
Sternula albifrons as Sterna albifrons		
Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sternula nereis as Sterna nereis		
Fairy Tern [82949]		Breeding known to occur within area
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

Scientific Name	Threatened Category	Presence Text
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
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]		Foraging, feeding or related behaviour known to occur within 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
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Cosmocampus howensis Lord Howe Pipefish [66208]		Species or species habitat may occur within area
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 mollisoni Mollison's Pipefish [66260]		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

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
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
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		

Scientific Name	Threatened Category	Presence Text
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		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely 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
Natator depressus		
Flatback Turtle [59257]	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

Current Scientific Name	Status	Type of Presence
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	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
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
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
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
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Foraging, feeding or related behaviour known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon 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

Current Scientific Name	Status	Type of Presence
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
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Flinders	Habitat Protection Zone (IUCN IV)
East Gippsland	Multiple Use Zone (IUCN VI)
Flinders	Multiple Use Zone (IUCN VI)
Flinders	National Park Zone (IUCN II)
Flinders	National Park Zone (IUCN II)

Park Name	Zone & IUCN Categories
Flinders	National Park Zone (IUCN II)
Freycinet	National Park Zone (IUCN II)

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
Barunguba Montague Island	Nature Reserve	NSW
Batemans	Marine Park	NSW
Baxter Island G.L.R.	Natural Features Reserve	VIC
Bemm, Goolengook, Arte and Errinundra Rivers	Heritage River	VIC
Benedore River	Reference Area	VIC
Beowa	National Park	NSW
Bermaguee	Nature Reserve	NSW
Bermagui	Flora Reserve	NSW
Beware Reef	Marine Sanctuary	VIC
Biamanga	National Park	NSW
Blond Bay G.L.R.	Natural Features Reserve	VIC
Blond Bay W.R.	Natural Features Reserve	VIC
Bournda	National Park	NSW
Brodribb River F.F.R	Nature Conservation Reserve	VIC
Broulee Island	Nature Reserve	NSW

Protected Area Name	Reserve Type	State
Cabbage Tree Creek 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
Double Creek	Natural Catchment Area	VIC
Eagles Claw	Nature Reserve	NSW
East Gippsland Coastal streams	Natural Catchment Area	VIC
Eurobodalla	National Park	NSW
Ewing Morass W.R	Natural Features Reserve	VIC
First and Second Islands F.R.	Nature Conservation Reserve	VIC
Flannagan Island G.L.R.	Natural Features Reserve	VIC
Fraser Island G.L.R.	Natural Features Reserve	VIC
Giffard H31 B.R	Natural Features Reserve	VIC
Gippsland Lakes Coastal Park	Conservation Park	VIC
Gulaga	National Park	NSW
Illawong	Nature Reserve	NSW
Jack Smith Lake W.R	Natural Features Reserve	VIC
Lake Coleman W.R	Natural Features Reserve	VIC
Lake Corringle W.R	Natural Features Reserve	VIC
Lake Curlip W.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Lake Denison W.R	Natural Features Reserve	VIC
Lake Tyers S.P.	State Park	VIC
Mallacoota B.R.	Natural Features Reserve	VIC
Metung B.R.	Natural Features Reserve	VIC
Mimosa Rocks	National Park	NSW
Morley Swamp G.L.R.	Natural Features Reserve	VIC
Mumbulla	Flora Reserve	NSW
Murrah	Flora Reserve	NSW
Nadgee	Nature Reserve	NSW
Ninety Mile Beach	Marine National Park	VIC
Nungurner B.R.	Natural Features 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
Raymond Island G.L.R.	Natural Features Reserve	VIC
Rigby Island G.L.R.	Natural Features Reserve	VIC
Salt Lake - Backwater Morass G.L.R.	Natural Features Reserve	VIC
Sandpatch	Wilderness Zone	VIC
Seal Creek	Reference Area	VIC
Snowy River	Heritage River	VIC
Steel Bay - Newland Backwater G.L.R.	Natural Features Reserve	VIC
Tanja	Flora Reserve	NSW

Protected Area Name	Reserve Type	State
The Lakes	National Park	VIC
Wallagaraugh River SS.R.	Natural Features Reserve	VIC
William Hunter F.R	Nature Conservation 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
Southern RFA	New South Wales

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Benedore River	VIC
Bondi Lake	NSW
Clyde River Estuary	NSW
Coila Creek Delta	NSW
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
Lake Wellington Wetlands	VIC
Lower Snowy River Wetlands System	VIC
Mallacoota Inlet Wetlands	VIC
Merimbula Lake	NSW

Wetland Name	State
Moruya River Estuary Saltmarshes	NSW
Nadgee Lake and tributary wetlands	NSW
Nargal Lake	NSW
Nelson Lagoon	NSW
Pambula Estuarine Wetlands	NSW
Snowy River	VIC
Sydenham Inlet Wetlands	VIC
Tamboon Inlet Wetlands	VIC
Tambo River (Lower Reaches) East Swamps	VIC
Thurra River	VIC
Tuross River Estuary	NSW
Twofold Bay	NSW
Waldrons Swamp	NSW
Wallaga Lake	NSW
Wallagoot Lagoon (Wallagoot Lake)	NSW

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Aurora Green Offshore Wind Farm Preliminary Surveys	2024/09968		Completed
Bermagui Golf Club Proposed Subdivision (Stages 3-8)	2022/09242		Post-Approval
Blue Mackerel North Offshore Wind Farm Marine Surveys	2024/09934		Completed
Blue Marlin Offshore Wind Energy Project	2023/09532		Completed
Broulee Beach Estate residential development subdivision	2023/09551		Completed
Eurobodalla Regional Hospital	2023/09506		Completed
Gippsland Dawn Offshore Wind Project Geophysical and Geotechnical Investigations	2024/10030		Referral Decision

Title of referral	Reference	Referral Outcome	Assessment Status
Gippsland Offshore Wind Farm Marine Survey Investigations	2023/09682		Completed
Gippsland Offshore Wind Transmission 2GW Project	2024/09980		Assessment
Gippsland Skies Offshore Wind Project marine surveys (investigations)	2024/09991		Referral Decision
Greater Gippsland Offshore Wind Project	2022/09379		Assessment
Greater Gippsland Offshore Wind Project Initial Marine Field Investigations	2022/09374		Completed
Krauatungalung Walk	2024/10043		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed
Mirador Residential Development Stages 8 & 9 and 13	2023/09685		Assessment
Navigator North Offshore Wind Farm ? Early Marine Survey Investigations	2024/10093		Referral Decision
Preliminary Site Investigations for Great Eastern Offshore Wind Project	2024/09890		Referral Decision
Proposed residential subdivision	2023/09632		Completed
Seadragon Offshore Wind, Early Marine Surveys	2023/09670		Completed
Seadragon Offshore Wind Farm	2022/9163		Completed
SMAP telecommunications submarine cable installation	2024/09989		Completed
Snug Cove Maritime Precinct	2024/09994		Completed
South East Australia Carbon Capture and Storage Project, Commonwealth waters	2023/09732		Completed
South East Australia Carbon Capture and Storage Project, Onshore and State waters	2023/09731		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
supersonic missile launch facility	2000/120		Completed
Controlled action			
Gippsland Lakes Mosquito Control Aerial /Hovercraft Spraying	2001/491	Controlled Action	Completed
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
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
Caswell Street - Moruya East	2020/8781	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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
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
DOFA weed eradication program at Goorooyaroo NSW	2003/1270	Not Controlled Action	Completed
Dredging of Tuross Lake channel and depositon of spoil in lake	2004/1554	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
Eden Wind Farm	2011/6037	Not Controlled Action	Completed
George Bass Drive Lilli Pilli Road Realignment	2021/8876	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
INDIGO Central Submarine Telecommunications Cable	2017/8127	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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Melville 1 Oil Exploration Well	2001/167	Not Controlled Action	Completed
Milton/Ulladulla Sewerage Scheme	2001/251	Not Controlled Action	Completed
Northright-1 Exploration Well	2001/209	Not Controlled Action	Completed
Offshore Petroleum Exploration	2001/289	Not Controlled Action	Completed
Offshore Seismic Survey	2001/498	Not Controlled Action	Completed
Pump station upgrades and rising main construction, Lakes Entrance, Victoria	2016/7646	Not Controlled Action	Completed
Ship to ship crude oil lightering	2008/4279	Not Controlled Action	Completed
Ship to Ship Crude Oil Lightering	2001/271	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	2008/4131	Not Controlled Action (Particular Manner)	Post-Approval
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 Permit Area VIC/P49	2006/2943	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey Program in Bass Strait	2008/4040	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
3D Seismic Survey	2008/4528	Not Controlled Action (Particular Manner)	Post-Approval
Apache 3D seismic exploration survey	2006/3146	Not Controlled Action (Particular Manner)	Post-Approval
Bream 3D seismic survey	2006/2556	Not Controlled Action (Particular Manner)	Post-Approval
Eden Breakwater Wharf extension, NSW	2015/7582	Not Controlled Action (Particular Manner)	Post-Approval
Eden Breakwater Wharf Extension, NSW	2016/7828	Not Controlled Action (Particular Manner)	Completed
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	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
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
Non-exclusive 3-D Marine Seismic Survey, Bass Strait	2002/775	Not Controlled Action (Particular Manner)	Post-Approval
Northern Fields 3D Seismic Survey	2001/140	Not Controlled Action (Particular Manner)	Post-Approval
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
Seismic survey, Gippsland Basin	2001/525	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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Southern Margins 3D Seismic Survey VIC/P55	2007/3780	Not Controlled Action (Particular Manner)	Post-Approval
Tuskfish 3D Seismic Survey, Bass Strait	2002/864	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			
Beardie-1 Field wildcat oil well	2001/469	Referral Decision	Completed
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed
Holloman 2010 Vic/P60 3D Seismic Acquisition Survey Program	2009/5251	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
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
Big Horseshoe Canyon	South-east
Canyons on the eastern continental slope	Temperate east
Seamounts South and east of Tasmania	South-east
Shelf rocky reefs	Temperate east

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 carneipes Flesh-footed Shearwater [82404]	Foraging	Known to occur
Ardenna grisea Sooty Shearwater [82651]	Breeding	Known to occur
Ardenna grisea Sooty Shearwater [82651]	Foraging	Likely to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur
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 (sensu lato) Wandering Albatross [1073]	Foraging	Likely to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur
Eudyptula minor Little Penguin [1085]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Eudyptula minor Little Penguin [1085]	Breeding	Likely to occur
Eudyptula minor Little Penguin [1085]	Foraging	Known to occur
Macronectes giganteus Southern Giant Petrel [1060]	Foraging	Known to occur
Macronectes halli Northern Giant Petrel [1061]	Foraging	Known to occur
Oceanites oceanites Wilsons Storm Petrel [1034]	Migration	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
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Procellaria parkinsoni Black Petrel [1048]	Foraging	Likely to occur
Pterodroma macroptera Great-winged Petrel [1035]	Foraging	Likely to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur
Thalassarche cauta steadi White-capped Albatross [82344]	Foraging	Known to occur
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Likely to occur
Thalasseus bergii Crested Tern [83000]	Breeding	Known to occur
Thalasseus bergii Crested Tern [83000]	Foraging	Likely to occur
Sharks		
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur
Carcharias taurus Grey Nurse Shark [64469]	Migration	Known to occur
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
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur

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 is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Jul-2025

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Figure: Sorrel Environmental Sector

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	1
National Heritage Places:	3
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	107
Listed Migratory Species:	63

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:	2
Commonwealth Heritage Places:	2
Listed Marine Species:	101
Whales and Other Cetaceans:	32
Critical Habitats:	1
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	8
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:	43
Regional Forest Agreements:	1
Nationally Important Wetlands:	5
EPBC Act Referrals:	32
Key Ecological Features (Marine):	2
Biologically Important Areas:	27
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Legal Status
Tasmanian Wilderness	TAS	Declared property

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Recherche Bay (North East Peninsula) Area	TAS	Listed place
Indigenous		
Western Tasmania Aboriginal Cultural Landscape	TAS	Listed place
Natural		
Tasmanian Wilderness	TAS	Listed place

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened 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
Alpine Sphagnum Bogs and Associated Fens	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community likely to occur within area
Lowland Native Grasslands of Tasmania	Critically Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)	Critically Endangered	Community likely to occur within area
Tasmanian white gum (Eucalyptus viminalis) wet forest	Critically Endangered	Community likely to 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		
Aquila audax fleayi Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Breeding likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat 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	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	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
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
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Roosting known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Breeding known to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Breeding 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 likely to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Pardalotus quadragintus Forty-spotted Pardalote [418]	Endangered	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat 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
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Breeding known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
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	Breeding known to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Foraging, feeding or related behaviour likely to 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
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
Tyto novaehollandiae castanops (Tasmanian population)		
Masked Owl (Tasmanian) [67051]	Vulnerable	Breeding known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Species or species habitat known to occur within area
CRUSTACEAN		
Astacopsis gouldi		
Giant Freshwater Crayfish, Tasmanian Giant Freshwater Lobster [64415]	Vulnerable	Species or species habitat likely to occur within area
FISH		
Brachionichthys hirsutus		
Spotted Handfish [64418]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Brachiopsilus ziebelli		
Ziebell's Handfish, Waterfall Bay Handfish [83757]	Vulnerable	Species or species habitat likely to 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
Seriolella brama		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
Thymichthys politus		
Red Handfish [83756]	Critically Endangered	Species or species habitat may occur within area
FROG		
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
INSECT		
Oreisplanus munionga larana		
Marrawah Skipper, Alpine Sedge Skipper, Alpine Skipper [77747]	Vulnerable	Species or species habitat known to occur within area
MAMMAL		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Dasyurus maculatus maculatus (Tasmanian population)		
Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]	Vulnerable	Species or species habitat known to occur within area
Dasyurus viverrinus		
Eastern Quoll, Luaner [333]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Breeding known to occur within area
Mirounga leonina		
Southern Elephant Seal [26]	Vulnerable	Breeding may occur within area
Perameles gunnii gunnii		
Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	Species or species habitat known to occur within area
Sarcophilus harrisii		
Tasmanian Devil [299]	Endangered	Species or species habitat likely to occur within area
PLANT		
Caladenia dienema		
Windswept Spider-orchid [64858]	Endangered	Species or species habitat known to occur within area
Caladenia lindleyana		
Lindley's Spider-orchid [9305]	Critically Endangered	Species or species habitat may occur within area
Centrolepis pedderensis		
Pedder Centrolepis, Pedder Bristlewort [12647]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Colobanthus curtisiae Curtis' Colobanth [23961]	Vulnerable	Species or species habitat may occur within area
Corunastylis brachystachya Short-spiked Midge-orchid, Rocky Cape Midge Orchid [76410]	Endangered	Species or species habitat known to occur within area
Craspedia preminghana Preminghana Billybutton [77046]	Endangered	Species or species habitat likely to occur within area
Diuris lanceolata Snake Orchid [10231]	Endangered	Species or species habitat known to occur within area
Epacris stuartii Stuart's Heath, Southport Heath [10348]	Critically Endangered	Species or species habitat known to occur within area
Epacris virgata Pretty Heath, Dan Hill Heath [20375]	Endangered	Species or species habitat likely to occur within area
Euphrasia fragosa Shy Eyebright, Southport Eyebright [64901]	Critically Endangered	Species or species habitat known to occur within area
Euphrasia gibbsiae subsp. psilantherea Swamp Eyebright [21507]	Critically Endangered	Species or species habitat known to occur within area
Hiya distans listed as Hypolepis distans Scrambling Ground-fern [92548]	Endangered	Species or species habitat likely to occur within area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat may occur within area
Lomatia tasmanica King's Lomatia [3745]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
Prasophyllum apoxychilum Tapered Leek-orchid [64947]	Endangered	Species or species habitat known to occur within area
Prasophyllum castaneum Chestnut Leek-orchid [64948]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum favonium Western Leek-orchid [64949]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum pulchellum Pretty Leek-orchid [64953]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum secutum Northern Leek-orchid [64954]	Endangered	Species or species habitat likely to occur within area
Pseudocephalozia paludicola Alpine Leafy Liverwort [66441]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat known to occur within area
Pterostylis rubenachii Arthur River Greenhood [64536]	Endangered	Species or species habitat known to occur within area
Pterostylis ziegeleri Grassland Greenhood, Cape Portland Greenhood [64971]	Vulnerable	Species or species habitat known to occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thelymitra jonesii Sky-blue Sun-orchid [76352]	Endangered	Species or species habitat known to occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
Carinascincus microlepidotus Boulder Cool-skink, Southern Snow Skink [90207]	Endangered	Species or species habitat likely to occur within area
Carinascincus orocryptus Heath Cool-skink, Mountain Skink [90209]	Endangered	Species or species habitat likely to occur within area
Carinascincus palfreymani Pedra Branca Skink, Pedra Branca Cool-skink, Red-throated Skink [90203]	Critically Endangered	Species or species habitat known 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	Breeding likely to occur within area
SEASTAR		
Parvulastra vivipara Tasmanian Live-bearing Seastar [85451]	Vulnerable	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour 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

Scientific Name	Threatened Category	Presence Text
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat likely to occur within area
Zearaja maugeana Maugean Skate, Port Davey Skate [83504]	Endangered	Species or species habitat known to 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
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Breeding known 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

Scientific Name	Threatened Category	Presence Text
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to 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]	Vulnerable	Breeding 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 carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Breeding known to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Foraging, feeding or related behaviour likely to 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

Scientific Name	Threatened Category	Presence Text
[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
[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
[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 may occur within area
[Carcharias taurus](#) Grey Nurse Shark [64469]		Species or species habitat may occur within area
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding 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
Phocoena dioptrica Spectacled Porpoise [66728]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Roosting known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to 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
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris alba Sanderling [875]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	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
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat known to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Species or species habitat 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 - [60116]	TAS
Commonwealth Land - [60346]	TAS

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Cape Sorell Lighthouse	TAS	Listed place
Natural		
Tasmanian Seamounts Area	EXT	Listed place

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
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

Scientific Name	Threatened Category	Presence Text
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Breeding known 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	Species or species habitat known to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris alba Sanderling [875]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat known to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		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

Scientific Name	Threatened Category	Presence Text
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
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]		Species or species habitat known to occur within area overfly marine area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Roosting 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	Breeding known to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Morus serrator Australasian Gannet [1020]		Breeding known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to 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	Breeding 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 likely to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat 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
Pelecanoides urinatrix Common Diving-Petrel [1018]		Breeding known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		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]		Species or species habitat known to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Breeding known to 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
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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	Breeding known to occur within area
Thalassarche chrysostoma		
Grey-headed Albatross [66491]	Endangered	Foraging, feeding or related behaviour likely to 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
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

Scientific Name	Threatened Category	Presence Text
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]		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 overfly marine area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Species or species habitat 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
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

Scientific Name	Threatened Category	Presence Text
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
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 mollisoni Mollison's Pipefish [66260]		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

Scientific Name	Threatened Category	Presence Text
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
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
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]		Breeding known to 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
[Mirounga leonina](#) Southern Elephant Seal [26]	Vulnerable	Breeding may occur within area
Reptile		
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding 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 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 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
[Berardius arnuxii](#) Arnoux's Beaked Whale [70]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
[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	Breeding 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
[Hyperoodon planifrons](#) Southern Bottlenose Whale [71]		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 cruciger](#) Hourglass Dolphin [42]		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
[Phocoena dioptrica](#) Spectacled Porpoise [66728]		Species or species habitat may occur within area
[Physeter macrocephalus](#) Sperm Whale [59]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Critical Habitats [Resource Information]

Name	Type of Presence
Thalassarche cauta (Shy Albatross) - Albatross Island, The Mewstone, Pedra Branca	Listed Critical Habitat

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Franklin	Multiple Use Zone (IUCN VI)
Huon	Multiple Use Zone (IUCN VI)
Tasman Fracture	Multiple Use Zone (IUCN VI)
Huon	National Park Zone (IUCN II)
South Tasman Rise	National Park Zone (IUCN II)
Tasman Fracture	National Park Zone (IUCN II)
Tasman Fracture	National Park Zone (IUCN II)
Zeehan	National Park Zone (IUCN II)

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Actaeon Island	Game Reserve	TAS
Arthur-Pieman	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Arthur River Rd Marrawah	Conservation Covenant	TAS
Badger River	Regional Reserve	TAS
Burnett Point	Conservation Area	TAS
Calm Bay	State Reserve	TAS
Cape Sorell	Historic Site	TAS
Catamaran River	Conservation Area	TAS
D'Entrecasteaux Watering Place	Historic Site	TAS
Farm Cove	Game Reserve	TAS
Four Mile Beach	Regional Reserve	TAS
Franklin-Gordon Wild Rivers	National Park	TAS
George III Monument	Historic Site	TAS
Hastings Bay	Conservation Area	TAS
Ida Bay	State Reserve	TAS
Ida Bay	Conservation Covenant	TAS
Kings Run	Private Nature Reserve	TAS
Kings Run #2	Conservation Covenant	TAS
Leprena Trust - Sullivan Point	Conservation Covenant	TAS
Little Trefoil	Conservation Area	TAS
Macquarie Harbour	Historic Site	TAS
Mount Dundas	Regional Reserve	TAS
Mount Heemskirk	Regional Reserve	TAS
Ocean Beach	Conservation Area	TAS
Pelican Island	Conservation Area	TAS
Pieman River	State Reserve	TAS
Recherche Bay	Nature Recreation Area	TAS
Recherche Bay Reserve - Southport Lagoon Conservation Covena	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Slaves Bay	Conservation Area	TAS
South Bruny	National Park	TAS
Southport Lagoon	Conservation Area	TAS
Southwest	Conservation Area	TAS
Southwest	National Park	TAS
Strahan Customs House	Historic Site	TAS
Sundown Point	State Reserve	TAS
Teepookana	Regional Reserve	TAS
The Doughboys	Nature Reserve	TAS
Tikkawoppa Plateau	Regional Reserve	TAS
Trial Harbour	State Reserve	TAS
Tully River	Conservation Area	TAS
Warra Creek	Regional Reserve	TAS
West Coast Range	Regional Reserve	TAS
West Point	State Reserve	TAS

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
Tasmania RFA	Tasmania

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Lake Ashwood	TAS
Lake Bantick	TAS
Lake Garcia	TAS
South East Cape Lakes	TAS
Unnamed Wetland	TAS

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Marine Farming Expansion, Macquarie Harbour, TAS	2012/6406		Assessment
Upgrade of Arthur River Road	2003/930		Completed
Woolnorth Wind Farm Repowering	2024/09880		Assessment
Controlled action			
Dairy Farm expansion on the Woolnorth property	2013/6710	Controlled Action	Completed
DPIPWE - Arthur-Pieman Conservation Area - off-road vehicle mitigation actions	2017/8038	Controlled Action	Completed
Heemskirk Windfarm Development	2002/678	Controlled Action	Completed
Tarkine Forest Drive Road Upgrade	2011/6210	Controlled Action	Post-Approval
The Tarkine Road Project	2009/5169	Controlled Action	Completed
Wind Farm Construction	2000/12	Controlled Action	Post-Approval
Not controlled action			
2D seismic survey, Petroleum Exploration Permit Area T/36P	2004/1787	Not Controlled Action	Completed
Capture of Juvenile Tasmanian Devils for Conservation Purposes	2007/3261	Not Controlled Action	Completed
Capture of Tasmanian Devils from Disease-Free Areas	2007/3883	Not Controlled Action	Completed
d'Entrecasteaux sites in Tasmania	2006/2618	Not Controlled Action	Completed
Eco-Tourism Development	2001/442	Not Controlled Action	Completed
Ecotourism Facility	2007/3322	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Remote power generation project	2005/2287	Not Controlled Action	Completed
Saline Recharge of meromictic Lake Fidler	2004/1334	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
2D Marine Seismic Survey	2005/2295	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey in Permit Areas T/32P and T/33P	2002/845	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey	2008/3962	Not Controlled Action (Particular Manner)	Post-Approval
Collection of cast bull kelp	2002/813	Not Controlled Action (Particular Manner)	Post-Approval
Deepwater Sorell Basin 2001 Non-Exclusive 2D Seismic Survey	2001/156	Not Controlled Action (Particular Manner)	Post-Approval
Granville Wind Farm, TAS	2012/6585	Not Controlled Action (Particular Manner)	Post-Approval
Luxury Cruise on the Gordon River, Tasmanian Wilderness PT 2	2006/3044	Not Controlled Action (Particular Manner)	Post-Approval
Luxury Cruise on the Gordon River, Tasmanian Wilderness WHA	2004/1846	Not Controlled Action (Particular Manner)	Post-Approval
Southern Margins T/35P and T/36P 3D Seismic Surveys	2007/3817	Not Controlled Action (Particular Manner)	Post-Approval
Surface Geochemical Exploration Program, TAS	2010/5780	Not Controlled Action (Particular Manner)	Post-Approval
Wolseley 3D seismic acquisition survey	2010/5703	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Kelly Channel Discharge, Macquarie Harbour, Tasmania	2017/8057	Referral Decision	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
Land clearing for stock grazing	2005/2176	Referral Decision	Completed
Wolseley 3D Seismic Acquisition Survey in Permit T/32P	2010/5291	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
Seamounts South and east of Tasmania	South-east
West Tasmania Canyons	South-east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna grisea Sooty Shearwater [82651]	Breeding	Known to occur
Ardenna grisea Sooty Shearwater [82651]	Foraging	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known 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

Scientific Name	Behaviour	Presence
Morus serrator Australasian Gannet [1020]	Aggregation	Known to occur
Morus serrator Australasian Gannet [1020]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Breeding	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Breeding	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Known to occur
Pterodroma mollis Soft-plumaged Petrel [1036]	Breeding	Known to occur
Pterodroma mollis Soft-plumaged Petrel [1036]	Foraging	Known to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Breeding	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 chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging likely	Likely to occur

Scientific Name	Behaviour	Presence
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]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Jul-2025

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements

Figure: SE Tasmania Environmental Sector

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:	4
National Heritage Places:	6
Wetlands of International Importance (Ramsar	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	7
Listed Threatened Species:	131
Listed Migratory Species:	68

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:	84
Commonwealth Heritage Places:	7
Listed Marine Species:	101
Whales and Other Cetaceans:	33
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	8
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:	415
Regional Forest Agreements:	1
Nationally Important Wetlands:	11
EPBC Act Referrals:	86
Key Ecological Features (Marine):	1
Biologically Important Areas:	23
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Legal Status
Australian Convict Sites (Cascades Female Factory)	TAS	Declared property
Australian Convict Sites (Coal Mines Historic Site)	TAS	Declared property
Australian Convict Sites (Darlington Probation Station)	TAS	Declared property
Australian Convict Sites (Port Arthur Historic Site)	TAS	Declared property

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Cascades Female Factory	TAS	Listed place
Cascades Female Factory Yard 4 North	TAS	Listed place
Coal Mines Historic Site	TAS	Listed place
Darlington Probation Station	TAS	Listed place
Port Arthur Historic Site	TAS	Listed place
Richmond Bridge	TAS	Listed place

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Apsley marshes	Within 10km of Ramsar site
Jocks lagoon	Within Ramsar site
Moulting lagoon	Within Ramsar site
Pitt water-orielton lagoon	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)

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
Alpine Sphagnum Bogs and Associated Fens	Endangered	Community may occur within area
Eucalyptus ovata - Callitris oblonga Forest	Vulnerable	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community likely to occur within area
Lowland Native Grasslands of Tasmania	Critically Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)	Critically Endangered	Community likely to occur within area
Tasmanian white gum (Eucalyptus viminalis) wet forest	Critically Endangered	Community likely to 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		
Aquila audax fleayi		
Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Breeding likely to occur within area
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Arenaria interpres		
Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat known to occur within area
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	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

Scientific Name	Threatened Category	Presence Text
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
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	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	Breeding 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	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to 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
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
Pardalotus quadragintus Forty-spotted Pardalote [418]	Endangered	Foraging, feeding or related behaviour 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	Species or species habitat 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
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	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

Scientific Name	Threatened Category	Presence Text
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	Foraging, feeding or related behaviour likely to 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
Thinornis cucullatus cucullatus Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
[Tyto novaehollandiae castanops (Tasmanian population)](#) Masked Owl (Tasmanian) [67051]	Vulnerable	Breeding known to occur within area
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Species or species habitat known to occur within area
FISH		
[Brachionichthys hirsutus](#) Spotted Handfish [64418]	Critically Endangered	Species or species habitat known to occur within area
[Brachiopsilus ziebelli](#) Ziebell's Handfish, Waterfall Bay Handfish [83757]	Vulnerable	Species or species habitat likely to occur within area
[Galaxias fontanus](#) Swan Galaxias [26167]	Endangered	Species or species habitat may occur within area
[Galaxiella pusilla](#) Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Endangered	Species or species habitat may 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
[Seriolella brama](#) Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Thymichthys politus		
Red Handfish [83756]	Critically Endangered	Species or species habitat known to occur within area
FROG		
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
INSECT		
Antipodia chaostola leucophaea		
Tasmanian Chaostola Skipper, Heath-sand Skipper [77672]	Endangered	Species or species habitat known to occur within area
Lissotes latidens		
Broad-toothed Stag Beetle, Wielangta Stag Beetle [66760]	Endangered	Species or species habitat known to occur within area
Micropathus kiernani		
Francistown Cave Cricket, Southern sandstone cave cricket [82084]	Critically Endangered	Species or species habitat may occur within area
MAMMAL		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	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
Dasyurus maculatus maculatus (Tasmanian population)		
Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]	Vulnerable	Species or species habitat known to occur within area
Dasyurus viverrinus		
Eastern Quoll, Luaner [333]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Breeding known to occur within area
[Perameles gunnii gunnii](#) Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	Species or species habitat known to occur within area
[Pseudomys novaehollandiae](#) New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area
[Sarcophilus harrisii](#) Tasmanian Devil [299]	Endangered	Translocated population known to occur within area
OTHER		
[Leucopatus anophthalmus](#) Blind Velvet Worm [90855]	Endangered	Species or species habitat known to occur within area
PLANT		
[Acacia axillaris](#) Midlands Mimosa, Midlands Wattle [13563]	Vulnerable	Species or species habitat known to occur within area
[Bertya tasmanica subsp. tasmanica](#) Tasmanian Bertya [78359]	Endangered	Species or species habitat known to occur within area
[Boronia gunnii](#) Gunn's Boronia, Cataract Gorge Boronia [29394]	Vulnerable	Species or species habitat likely to occur within area
[Boronia hippopala](#) Velvet Boronia [78925]	Vulnerable	Species or species habitat likely to occur within area
[Caladenia caudata](#) Tailed Spider-orchid [17067]	Vulnerable	Species or species habitat known to occur within area
[Caladenia lindleyana](#) Lindley's Spider-orchid [9305]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Caladenia saggicola Sagg Spider-orchid [64859]	Critically Endangered	Species or species habitat known to occur within area
Caladenia sylvicola Forest Fingers [64860]	Critically Endangered	Species or species habitat known to occur within area
Callitris oblonga Pygmy Cypress-pine, Pigmy Cypress-pine, Dwarf Cypress-pine [66687]	Vulnerable	Species or species habitat known to occur within area
Callitris oblonga subsp. oblonga South Esk Pine [64864]	Endangered	Species or species habitat known to occur within area
Colobanthus curtisiae Curtis' Colobanth [23961]	Vulnerable	Species or species habitat likely to occur within area
Conospermum hookeri Variable Smoke-bush [68161]	Vulnerable	Species or species habitat likely to occur within area
Corunastylis firthii Firth's Midge-orchid [76411]	Critically Endangered	Species or species habitat known to occur within area
Dianella amoena Matted Flax-lily [64886]	Endangered	Species or species habitat known to occur within area
Epacris apsleyensis Apsley Heath [15428]	Endangered	Species or species habitat known to occur within area
Epacris barbata Bearded Heath, Freycinet Heath [17625]	Endangered	Species or species habitat likely to occur within area
Epacris grandis Grand Heath, Tall Heath [18719]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Epacris graniticola Mt Cameron Heath, Granite Heath [82822]	Critically Endangered	Species or species habitat may occur within area
Epacris virgata Pretty Heath, Dan Hill Heath [20375]	Endangered	Species or species habitat known to occur within area
Eucalyptus morrisbyi Morrisby's Gum, Morrisbys Gum [7382]	Critically Endangered	Species or species habitat known to occur within area
Euphrasia amphisysepala Shiny Cliff Eyebright [4534]	Vulnerable	Species or species habitat known to occur within area
Euphrasia fragosa Shy Eyebright, Southport Eyebright [64901]	Critically Endangered	Species or species habitat known to occur within area
Euphrasia phragmostoma Bufton's Eyebright, Hairy Cliff Eyebright [7720]	Vulnerable	Species or species habitat known to occur within area
Euphrasia semipicta Peninsula Eyebright [9986]	Endangered	Species or species habitat known to occur within area
Euphrasia sp. Bivouac Bay (W.R.Barker 7626 et al.) Masked Eyebright, Masked Cliff Eyebright [82044]	Endangered	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat known to occur within area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Limonium australe var. baudinii Baudin's Sea-lavender [86369]	Vulnerable	Species or species habitat likely to occur within area
Ozothamnus reflexifolius Reflexed Everlasting [77384]	Vulnerable	Species or species habitat known to occur within area
Phebalium daviesii Davies' Waxflower, St Helens Waxflower [16959]	Critically Endangered	Species or species habitat known to occur within area
Philotheca freyciana Freycinet Waxflower [68227]	Endangered	Species or species habitat known to occur within area
Pomaderris pilifera subsp. talpicutica Moleskin Dogwood [84295]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum apoxychilum Tapered Leek-orchid [64947]	Endangered	Species or species habitat known to occur within area
Prasophyllum castaneum Chestnut Leek-orchid [64948]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum milfordense Milford Leek-orchid [64950]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum perangustum Knocklofty Leek-orchid [64952]	Critically Endangered	Species or species habitat likely to occur within area
Prasophyllum pulchellum Pretty Leek-orchid [64953]	Critically Endangered	Species or species habitat known to occur within area
Pseudocephalozia paludicola Alpine Leafy Liverwort [66441]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pterostylis commutata Midland Greenhood [64535]	Critically Endangered	Species or species habitat may occur within area
Pterostylis ziegeleri Grassland Greenhood, Cape Portland Greenhood [64971]	Vulnerable	Species or species habitat known to occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area
Spyridium lawrencei Small-leaf Spyridium [27036]	Endangered	Species or species habitat known to occur within area
Stenanthemum pimeleoides Spreading Stenanthemum, Propellor Plant [15450]	Vulnerable	Species or species habitat known to occur within area
Stonesiella selaginoides Clubmoss Bush-pea [68100]	Endangered	Species or species habitat likely to occur within area
Thelymitra jonesii Sky-blue Sun-orchid [76352]	Endangered	Species or species habitat known to occur within area
Xanthorrhoea arenaria Sand Grasstree [21603]	Vulnerable	Species or species habitat may occur within area
Xanthorrhoea bracteata Shiny Grasstree [7950]	Endangered	Species or species habitat known to occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	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

Scientific Name	Threatened Category	Presence Text
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
SEASTAR		
Marginaster littoralis		
Derwent River Seastar [66762]	Critically Endangered	Species or species habitat likely to occur within area
Parvulastra vivipara		
Tasmanian Live-bearing Seastar [85451]	Vulnerable	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Migration route 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
SNAIL		
Ammoniropa vigens		
Ammonite Pinwheel Snail [90200]	Critically Endangered	Species or species habitat known to 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

Scientific Name	Threatened Category	Presence Text
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Breeding known 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
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to 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 likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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 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	Foraging, feeding or related behaviour likely to 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
Migratory Marine Species		
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
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 may occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Migration route 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

Scientific Name	Threatened Category	Presence Text
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	Breeding 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]		Foraging, feeding or related behaviour known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Phocoena dioptrica Spectacled Porpoise [66728]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		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
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat 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 may occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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	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
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		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	Species or species habitat known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Species or species habitat 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
Defence	
Defence - 8 Fitzroy Place, Hobart [60001]	TAS
Defence - ANGLESEA BARRACKS - HOBART [60014]	TAS
Defence - ANGLESEA BARRACKS - HOBART [60012]	TAS
Defence - ANGLESEA BARRACKS - HOBART [60013]	TAS
Defence - BUCKLAND TRAINING AREA [60007]	TAS
Defence - Continental Building [60033]	TAS
Defence - DOWSING POINT TRAINING DEPOT ; DERWENT BARRACKS [60015]	TAS
Defence - FORT DIRECTION [60024]	TAS
Defence - FORT DIRECTION [60023]	TAS
Defence - HMAS HUON [60002]	TAS
Defence - HMAS HUON [60003]	TAS
Defence - WARRANE TRAINING DEPOT [60016]	TAS
Unknown	
Commonwealth Land - [60263]	TAS
Commonwealth Land - [60260]	TAS
Commonwealth Land - [60313]	TAS
Commonwealth Land - [60319]	TAS

Commonwealth Land Name	State
Commonwealth Land - [60070]	TAS
Commonwealth Land - [60312]	TAS
Commonwealth Land - [60265]	TAS
Commonwealth Land - [60262]	TAS
Commonwealth Land - [60266]	TAS
Commonwealth Land - [60267]	TAS
Commonwealth Land - [60269]	TAS
Commonwealth Land - [60341]	TAS
Commonwealth Land - [60343]	TAS
Commonwealth Land - [60278]	TAS
Commonwealth Land - [60302]	TAS
Commonwealth Land - [60332]	TAS
Commonwealth Land - [60268]	TAS
Commonwealth Land - [60323]	TAS
Commonwealth Land - [60322]	TAS
Commonwealth Land - [60328]	TAS
Commonwealth Land - [60326]	TAS
Commonwealth Land - [60063]	TAS
Commonwealth Land - [60068]	TAS
Commonwealth Land - [60255]	TAS
Commonwealth Land - [60318]	TAS
Commonwealth Land - [60290]	TAS
Commonwealth Land - [60264]	TAS
Commonwealth Land - [60352]	TAS
Commonwealth Land - [60243]	TAS
Commonwealth Land - [60245]	TAS
Commonwealth Land - [60306]	TAS

Commonwealth Land Name	State
Commonwealth Land - [60291]	TAS
Commonwealth Land - [60241]	TAS
Commonwealth Land - [60247]	TAS
Commonwealth Land - [60242]	TAS
Commonwealth Land - [60295]	TAS
Commonwealth Land - [60293]	TAS
Commonwealth Land - [60294]	TAS
Commonwealth Land - [60292]	TAS
Commonwealth Land - [60340]	TAS
Commonwealth Land - [60342]	TAS
Commonwealth Land - [60344]	TAS
Commonwealth Land - [60345]	TAS
Commonwealth Land - [60284]	TAS
Commonwealth Land - [60299]	TAS
Commonwealth Land - [60282]	TAS
Commonwealth Land - [60280]	TAS
Commonwealth Land - [60287]	TAS
Commonwealth Land - [60286]	TAS
Commonwealth Land - [60289]	TAS
Commonwealth Land - [60296]	TAS
Commonwealth Land - [60283]	TAS
Commonwealth Land - [60288]	TAS
Commonwealth Land - [60281]	TAS
Commonwealth Land - [60062]	TAS
Commonwealth Land - [60301]	TAS
Commonwealth Land - [60270]	TAS
Commonwealth Land - [60271]	TAS

Commonwealth Land Name	State
Commonwealth Land - [60273]	TAS
Commonwealth Land - [60272]	TAS
Commonwealth Land - [60275]	TAS
Commonwealth Land - [60277]	TAS
Commonwealth Land - [60276]	TAS
Commonwealth Land - [60335]	TAS
Commonwealth Land - [60339]	TAS
Commonwealth Land - [60331]	TAS
Commonwealth Land - [60330]	TAS
Commonwealth Land - [60327]	TAS
Commonwealth Land - [60298]	TAS
Commonwealth Land - [60333]	TAS
Commonwealth Land - [60324]	TAS
Commonwealth Land - [60320]	TAS

Commonwealth Heritage Places

[Resource Information]

Name	State	Status
Historic		
Anglesea Barracks	TAS	Listed place
Edward Braddon Commonwealth Law Courts	TAS	Listed place
Hobart Airport Air Traffic Control Tower	TAS	Listed place
Hobart General Post Office	TAS	Listed place
North Hobart Post Office	TAS	Listed place
Tasman Island Lighthouse	TAS	Listed place
Natural		
Tasmanian Seamounts Area	EXT	Listed place

Listed Marine Species

[Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		

Scientific Name	Threatened Category	Presence Text
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	Breeding known 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
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

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Species or species habitat 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	Species or species habitat 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 may occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area
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

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat 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
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area
Larus pacificus Pacific Gull [811]		Breeding known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Breeding 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	Species or species habitat known to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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]		Species or species habitat known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area
Pelecanoides urinatrix Common Diving-Petrel [1018]		Breeding known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		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	Species or species habitat known to occur within area overfly marine area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine 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
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding 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 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	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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]		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 overfly marine area

Scientific Name	Threatened Category	Presence Text
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Species or species habitat 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
[Histiogamphelus briggsii](#) Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		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
[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 mollisoni](#) Mollison's Pipefish [66260]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
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
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
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[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]		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 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

Current Scientific Name	Status	Type of Presence
[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
[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 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	Breeding 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
[Hyperoodon planifrons](#) Southern Bottlenose Whale [71]		Species or species habitat may occur within area
[Kogia breviceps](#) Pygmy Sperm Whale [57]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenorhynchus cruciger Hourglass Dolphin [42]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Foraging, feeding or related behaviour 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

Current Scientific Name	Status	Type of Presence
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Phocoena dioptrica Spectacled Porpoise [66728]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Freycinet	Habitat Protection Zone (IUCN IV)
Freycinet	Multiple Use Zone (IUCN VI)
Huon	Multiple Use Zone (IUCN VI)
Freycinet	National Park Zone (IUCN II)
Freycinet	National Park Zone (IUCN II)
Huon	National Park Zone (IUCN II)
South Tasman Rise	National Park Zone (IUCN II)
Freycinet	Recreational Use Zone (IUCN IV)

Park Name	Zone & IUCN Categories

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Adventure Bay	Conservation Covenant	TAS
Africa Gully	Nature Reserve	TAS
Alma Road	Conservation Covenant	TAS
Alma Tier	Conservation Area	TAS
Apex Point	Conservation Area	TAS
Apsley	Conservation Area	TAS
Apsley River	Conservation Covenant	TAS
Bangor #1	Conservation Covenant	TAS
Bangor #2	Conservation Covenant	TAS
Bangor - Bobs Gully	Conservation Covenant	TAS
Banwell Rd Little Swanport	Conservation Covenant	TAS
Barilla Bay	Conservation Covenant	TAS
Basin Hills	Conservation Covenant	TAS
Batchelors Grave	Historic Site	TAS
Bay of Fires	Conservation Area	TAS
Bellettes Bay	Conservation Area	TAS
Belmont	Conservation Covenant	TAS
Betsey Island	Nature Reserve	TAS
Billy Blue Hill	Conservation Covenant	TAS
Binalongtime	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Birchs Bay	Conservation Covenant	TAS
Blackman Rivulet	Marine Conservation Area	TAS
Bligh Point	Conservation Area	TAS
Blowhole Road #1	Conservation Covenant	TAS
Blowhole Road #2	Conservation Covenant	TAS
Blowhole Road #3	Conservation Covenant	TAS
Blowhole Road #4	Conservation Covenant	TAS
Blubber Head	Conservation Covenant	TAS
Blue Hills	Conservation Covenant	TAS
Blue Hills #2	Conservation Covenant	TAS
Boggy Creek	Conservation Area	TAS
Boltons Beach	Conservation Area	TAS
Boot Bay	Conservation Area	TAS
Breakneck Hill	Conservation Covenant	TAS
Bream Creek	Conservation Covenant	TAS
Brother and Sister	Conservation Area	TAS
Bruny Island Main Rd North Bruny #1	Conservation Covenant	TAS
Bruny Island Main Rd North Bruny #2	Conservation Covenant	TAS
Bruny Island Neck	Game Reserve	TAS
Bull Bay #2	Conservation Covenant	TAS
Buxton River	Conservation Area	TAS
Calverts Hill	Nature Reserve	TAS
Calverts Lagoon	Conservation Area	TAS
Cambria #1	Conservation Covenant	TAS
Cambria #2	Conservation Covenant	TAS
Caolila	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Cape Bernier	Nature Reserve	TAS
Cape Contrariety	Private Sanctuary	TAS
Cape de la Sortie	Conservation Area	TAS
Cape Deslacs	Nature Reserve	TAS
Cape Direction	Private Sanctuary	TAS
Cascades Female Factory	Historic Site	TAS
Cemetery Point	Historic Site	TAS
Central Channel	Marine Conservation Area	TAS
Cheverton	Conservation Covenant	TAS
Chimneys Lagoon	Conservation Covenant	TAS
Chronicle Point	Conservation Area	TAS
Chuckle Head	Conservation Area	TAS
Clifton Beach	Conservation Area	TAS
Cloudy Bay Lagoon	Conservation Covenant	TAS
Cloudy Bay Lagoon	Marine Conservation Area	TAS
Cloudy Bay Road	Conservation Covenant	TAS
Coal Mines	Historic Site	TAS
Coal Point	Conservation Area	TAS
Coles Bay	Conservation Area	TAS
Coningham	Nature Recreation Area	TAS
Connemara	Conservation Covenant	TAS
Coswell Beach	Conservation Area	TAS
Craigow Hill	Conservation Covenant	TAS
Cressy Beach	Conservation Area	TAS
Crooked Billet Bay	Conservation Area	TAS
Cusicks Hill	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
D'Entrecasteaux Monument	Historic Site	TAS
Dam Rd Saltwater River	Conservation Covenant	TAS
Darcy's Lagoon	Conservation Covenant	TAS
Dart Island	State Reserve	TAS
Denison River	Conservation Covenant	TAS
Denison Rivulet	Conservation Area	TAS
Dennes Hill	Nature Reserve	TAS
Devlyns Rd Birchs Bay	Conservation Covenant	TAS
Diamond Island	Nature Reserve	TAS
Dianas Basin	Conservation Covenant	TAS
Dobner - Dam Road	Conservation Covenant	TAS
Doctors Peak	Regional Reserve	TAS
Douglas-Apsley	National Park	TAS
Douglas River	Conservation Covenant	TAS
Duckhole Rivulet Richmond	Conservation Covenant	TAS
Eaglehawk Bay	State Reserve	TAS
Eaglehawk Bay-Flinders Bay	Conservation Area	TAS
Eaglehawk Neck	Historic Site	TAS
East Risdon	State Reserve	TAS
Echo Sugarloaf	State Reserve	TAS
Elephant Farm Elephant Pass	Conservation Covenant	TAS
Emita Trome Man-ner	Conservation Covenant	TAS
Enstone Park	Conservation Covenant	TAS
Esperance Point	Conservation Area	TAS
Fanfare Angora Stud #1	Conservation Covenant	TAS
Fanfare Angora Stud #2	Conservation Covenant	TAS
Fire Tower Rd Koonya	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Flagstaff Gully Quarry	Conservation Covenant	TAS
Flights Creek	Conservation Covenant	TAS
Forest Vale #1	Conservation Covenant	TAS
Forest Vale #2	Conservation Covenant	TAS
Forest Vale #3	Conservation Covenant	TAS
Fort Chimo	Conservation Covenant	TAS
Fossil Cove	Conservation Area	TAS
Four Mile Creek	Conservation Area	TAS
Four Mile Creek #1	Conservation Covenant	TAS
Four Mile Creek #2	Conservation Covenant	TAS
Freycinet	National Park	TAS
Friendly Beaches	Private Sanctuary	TAS
Friendly Beaches	Conservation Reserve	TAS
Friendly Beaches #2	Conservation Covenant	TAS
Friendly Beaches #3	Conservation Covenant	TAS
Friendly Beaches #4	Conservation Covenant	TAS
Frogmore Creek Vineyard #1	Conservation Covenant	TAS
Frogmore Creek Vineyard #2	Conservation Covenant	TAS
Garden Island Creek	Conservation Covenant	TAS
Gardens Road	Conservation Covenant	TAS
Gellibrand Point	Nature Recreation Area	TAS
George River - St Helens	Conservation Covenant	TAS
Glebe Hill	Conservation Covenant	TAS
Gordons Hill	Nature Recreation Area	TAS
Governor Island	Marine Nature Reserve	TAS
Grasstree Hill	Conservation Covenant	TAS
Green Island	Nature Reserve	TAS

Protected Area Name	Reserve Type	State
Happy Valley	Conservation Covenant	TAS
Happy Valley Rd Spring Beach	Conservation Covenant	TAS
Hardys Hill	Nature Reserve	TAS
Hawkers	Conservation Covenant	TAS
Hawks Hill	Conservation Covenant	TAS
Hazelwood (Carlton River)	Conservation Covenant	TAS
Hazelwood (Ravenscroft Rivulet)	Conservation Covenant	TAS
Heathfield - Whalebone Way	Conservation Covenant	TAS
Heathy Hill Dr #10	Conservation Covenant	TAS
Heathy Hill Dr #11	Conservation Covenant	TAS
Heathy Hill Dr #12	Conservation Covenant	TAS
Heathy Hill Dr #13	Conservation Covenant	TAS
Heathy Hill Dr #14	Conservation Covenant	TAS
Heathy Hill Dr #15	Conservation Covenant	TAS
Heathy Hill Dr #16	Conservation Covenant	TAS
Heathy Hill Dr #17	Conservation Covenant	TAS
Heathy Hill Dr #18	Conservation Covenant	TAS
Heathy Hill Dr #1 and #2	Conservation Covenant	TAS
Heathy Hill Dr #3	Conservation Covenant	TAS
Heathy Hill Dr #4	Conservation Covenant	TAS
Heathy Hill Dr #5	Conservation Covenant	TAS
Heathy Hill Dr #6	Conservation Covenant	TAS
Heathy Hill Dr #7	Conservation Covenant	TAS
Heathy Hill Dr #8	Conservation Covenant	TAS
Heathy Hill Dr #9	Conservation Covenant	TAS
Hendersons Lagoon	Conservation Covenant	TAS
Hillend	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Hippolyte Rocks	Marine Conservation Area	TAS
Hobdens Road Cambridge	Conservation Covenant	TAS
Hope Island	Nature Recreation Area	TAS
Humbug Point	Nature Recreation Area	TAS
Hurdle Rd Saltwater River #1	Conservation Covenant	TAS
Hurdle Rd Saltwater River #2	Conservation Covenant	TAS
Ile des Phoques	Nature Reserve	TAS
Inala	Conservation Covenant	TAS
Inala #2	Conservation Covenant	TAS
Iron Pot	State Reserve	TAS
Isle of Caves	Nature Reserve	TAS
Kangaroo Bluff	Historic Site	TAS
Karana	Conservation Covenant	TAS
Kelvedon	Conservation Covenant	TAS
Kelvedon Beach	Conservation Area	TAS
Kelvedon - TLC	Conservation Covenant	TAS
Killora	Conservation Covenant	TAS
Killora Rd North Bruny #1	Conservation Covenant	TAS
Killora Rd North Bruny #2	Conservation Covenant	TAS
Killora Rd North Bruny #3	Conservation Covenant	TAS
King George Island	Conservation Covenant	TAS
Kingston Golf Course	Private Sanctuary	TAS
Knopwood Hill	Nature Recreation Area	TAS
Lachlan Island	Nature Reserve	TAS
Lagoons Beach	Conservation Area	TAS
Lanark Farm #1	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Lanark Farm #2	Conservation Covenant	TAS
Lanark Farm #3	Conservation Covenant	TAS
Lanark Farm #4	Conservation Covenant	TAS
Lanark Farm #5	Conservation Covenant	TAS
Lanark Farm #6	Conservation Covenant	TAS
Lennon Rd North Bruny	Conservation Covenant	TAS
Liitle Swanport River	Conservation Covenant	TAS
Lilla Villa	Conservation Covenant	TAS
Lime Bay	State Reserve	TAS
Lisdillon	Conservation Covenant	TAS
Little Beach	State Reserve	TAS
Little Beach	Conservation Area	TAS
Little Christmas Island	Nature Reserve	TAS
Littles Road	Conservation Covenant	TAS
Little Swanport	Conservation Area	TAS
Long Bay	Conservation Area	TAS
Long Spit	Private Nature Reserve	TAS
Lookout Rock	State Reserve	TAS
Lot 2 Grasstree Hill	Conservation Covenant	TAS
Lower Marsh Creek	Regional Reserve	TAS
Lower Snug	Conservation Covenant	TAS
Lowes Hill	Conservation Covenant	TAS
Lowlands Richmond	Conservation Covenant	TAS
Lutregala Creek	Regional Reserve	TAS
Lutregala Marsh	Conservation Covenant	TAS
Lyall Road Binalong Bay	Conservation Covenant	TAS
Maclaines Creek	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Main Road Bruny Island	Conservation Covenant	TAS
Malwood - Rokeby Hills	Conservation Covenant	TAS
Marchwiel #3	Conservation Covenant	TAS
Marchwiel #4	Conservation Covenant	TAS
Marchwiel #5	Conservation Covenant	TAS
Marchwiel #6	Conservation Covenant	TAS
Marchwiel #7	Conservation Covenant	TAS
Marchwiel Bream Creek	Conservation Covenant	TAS
Marchwiel Cockle Bay	Conservation Covenant	TAS
Marchwiel Falls Festival #1	Conservation Covenant	TAS
Marchwiel Falls Festival #2	Conservation Covenant	TAS
Maria Island	National Park	TAS
Marion Beach	Conservation Area	TAS
Marks Point	Conservation Area	TAS
Marthvale	Conservation Covenant	TAS
Mayfield Bay	Conservation Area	TAS
McDonalds Point	Conservation Area	TAS
McPhersons Rd Adventure Bay	Conservation Covenant	TAS
Medeas Cove	Conservation Area	TAS
Meehan Range	Nature Recreation Area	TAS
Millingtons Beach	Conservation Area	TAS
Minno St Clarence	Conservation Covenant	TAS
Minno Street	Conservation Covenant	TAS
Monk Bay	Marine Conservation Area	TAS
Moulting Lagoon	Game Reserve	TAS
Mountain Creek	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Mount Arthur	State Reserve	TAS
Mount Bruny	Conservation Area	TAS
Mount Communication #2	Conservation Covenant	TAS
Mount Communication # 3	Conservation Covenant	TAS
Mount Communication # 4	Conservation Covenant	TAS
Mount Communication #5	Conservation Covenant	TAS
Mount Communication #6	Conservation Covenant	TAS
Mount Direction	Conservation Area	TAS
Mount Elephant	Conservation Covenant	TAS
Mount Mangana	Conservation Area	TAS
Mount Midway	Conservation Area	TAS
Mount Pearson	State Reserve	TAS
Mount Royal	Conservation Area	TAS
Mount Rumney	Conservation Area	TAS
Mt Murray	Conservation Covenant	TAS
Murrayfield & Kirby Lodge	Conservation Covenant	TAS
Newmans Creek Koonya	Conservation Covenant	TAS
Ninepin Point	Marine Nature Reserve	TAS
Norfolk Bay	Conservation Area	TAS
Norlin Creek	Conservation Covenant	TAS
Norris Rd Surveryors Bay	Conservation Covenant	TAS
North House	Conservation Covenant	TAS
North Passage Point	Conservation Area	TAS
North West Bay	Conservation Area	TAS
North West Head	Conservation Area	TAS
Nubeena #1	Conservation Covenant	TAS
Nubeena Rd Koonya	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Okehampton	Conservation Covenant	TAS
Old Bernies Road #1	Conservation Covenant	TAS
Old Bernies Road #2	Conservation Covenant	TAS
Old Station Road	Conservation Covenant	TAS
Opossum Bay	Marine Conservation Area	TAS
Outer North Head	Conservation Area	TAS
Paddys Island	Nature Reserve	TAS
Paddys Ridge Saltwater River	Conservation Covenant	TAS
Paraweena Road	Conservation Covenant	TAS
Parnella	Conservation Area	TAS
Pathways Little Swanport	Conservation Covenant	TAS
Peter Murrell	Conservation Area	TAS
Peter Murrell	State Reserve	TAS
Pipshy	Conservation Covenant	TAS
Pirates Bay	Nature Recreation Area	TAS
Pitt Water	Nature Reserve	TAS
Point Bailly	Conservation Area	TAS
Point du Ressac	Conservation Area	TAS
Port Arthur	Historic Site	TAS
Porter Hill	Conservation Covenant	TAS
Possums Place	Conservation Covenant	TAS
Power Rd North Bruny	Conservation Covenant	TAS
Premaydena Point	Historic Site	TAS
Pretty Heath Retreat	Conservation Covenant	TAS
Prices Bay	Conservation Covenant	TAS
Prices Flats Road	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Quarantine Station	State Reserve	TAS
Ralphs Bay	Conservation Area	TAS
Randalls Bay	Conservation Area	TAS
Randalls Bay #1	Conservation Covenant	TAS
Randalls Bay #2	Conservation Covenant	TAS
Randalls Bay #3	Conservation Covenant	TAS
Randalls Bay #4	Conservation Covenant	TAS
Randalls Bay #5	Conservation Covenant	TAS
Raspins Beach	Conservation Area	TAS
Ravensdale #1	Conservation Covenant	TAS
Ravensdale #2	Conservation Covenant	TAS
Redbanks	Conservation Covenant	TAS
Red Reef	Conservation Area	TAS
Richmond Gaol	Historic Site	TAS
Ringwood	Conservation Covenant	TAS
River of Peace	Conservation Covenant	TAS
Riverside	Conservation Covenant	TAS
Roaring	Conservation Covenant	TAS
Roaring Beach	Conservation Covenant	TAS
Roaring Beach	Conservation Area	TAS
Roaring Beach Rd Nubeena	Conservation Covenant	TAS
Roberts Hill	Conservation Covenant	TAS
Roberts Point	Marine Conservation Area	TAS
Rocky Hills #1	Conservation Covenant	TAS
Rocky Hills #2	Conservation Covenant	TAS
Rocky Hills #3	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Rocky Hills #4	Conservation Covenant	TAS
Rocky Hills #5	Conservation Covenant	TAS
Rocky Hills #6	Conservation Covenant	TAS
Rocky Hills #7	Conservation Covenant	TAS
Rocky Hills - North	Conservation Covenant	TAS
Rokeby Hills Reserve	Conservation Covenant	TAS
Rosny Hill	Nature Recreation Area	TAS
Rudds Hill	Conservation Covenant	TAS
Rudds Hill Orford	Conservation Covenant	TAS
Rushy Lagoon	Private Nature Reserve	TAS
Rushy Lagoon	Conservation Covenant	TAS
Safety Cove	State Reserve	TAS
Saintys Creek	Conservation Covenant	TAS
Salem Bay	Conservation Area	TAS
Sandspit River	Private Sanctuary	TAS
Scamander	Regional Reserve	TAS
Scamander	Conservation Area	TAS
Schemers Creek	Conservation Covenant	TAS
Seaford Rd Little Swanport	Conservation Covenant	TAS
Seaford Road	Conservation Covenant	TAS
Semaphore Farm	Conservation Covenant	TAS
Seymour	Conservation Area	TAS
Sheepwash Bay	Conservation Area	TAS
Sheepwash Road Allonah	Conservation Covenant	TAS
Shot Tower	Historic Site	TAS
Simpsons Bay	Conservation Area	TAS
Simpsons Bay Road	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Simpsons Point	Conservation Covenant	TAS
Simpsons Point	Marine Conservation Area	TAS
Sloping Island	Marine Conservation Area	TAS
Sloping Main	Conservation Area	TAS
Snake Bay	Conservation Area	TAS
Snug Tiers	Nature Recreation Area	TAS
South Arm	Conservation Area	TAS
South Arm	Nature Recreation Area	TAS
South Arm	Marine Conservation Area	TAS
South Bruny	National Park	TAS
South Lea	Conservation Covenant	TAS
South Lea - North Hill	Conservation Covenant	TAS
South Lea - Peppermint Hill	Conservation Covenant	TAS
Spectacle Islands	Nature Reserve	TAS
Spiky Beach	Conservation Area	TAS
Stewarts Bay	State Reserve	TAS
St Helens	Conservation Area	TAS
St Helens	Conservation Covenant	TAS
St Helens 1 Marthavale	Conservation Covenant	TAS
St Patricks Head	State Reserve	TAS
Sugarloaf Road Forcett	Conservation Covenant	TAS
Surveyors Bay	Conservation Area	TAS
Swansea	Conservation Area	TAS
Sympathy Hills	Private Nature Reserve	TAS
Tasman	National Park	TAS

Protected Area Name	Reserve Type	State
Tasman Hwy Four Mile Creek	Conservation Covenant	TAS
Tasman Monument	Historic Site	TAS
Templestowe #1	Conservation Covenant	TAS
Templestowe #2	Conservation Covenant	TAS
Templestowe #3	Conservation Covenant	TAS
Templestowe #4	Conservation Covenant	TAS
Tessellated Pavement	State Reserve	TAS
The Lea	Private Sanctuary	TAS
The Run #1	Conservation Covenant	TAS
The Run #2	Conservation Covenant	TAS
The Run #3	Conservation Covenant	TAS
The Run #4	Conservation Covenant	TAS
The Sheepwash	Conservation Covenant	TAS
Thinking Frog - Tinderbox	Conservation Covenant	TAS
Three Thumbs	State Reserve	TAS
Tinderbox	Nature Reserve	TAS
Tinderbox	Marine Nature Reserve	TAS
Township	Conservation Covenant	TAS
Township Hill	Conservation Covenant	TAS
Toxteth Park #1	Conservation Covenant	TAS
Toxteth Park #2	Conservation Covenant	TAS
Toxteth Park #3	Conservation Covenant	TAS
Toxteth Park #4	Conservation Covenant	TAS
Toxteth Park #5	Conservation Covenant	TAS
Toxteth Park #7	Conservation Covenant	TAS
Toxteth Park #8	Conservation Covenant	TAS
Trefula	Conservation Covenant	TAS

Protected Area Name	Reserve Type	State
Truganini	Conservation Area	TAS
Turners Hill - Alonnah	Conservation Covenant	TAS
Two Mile Creek - Spring Beach	Conservation Covenant	TAS
Unnamed (Browns River)	Conservation Area	TAS
Unnamed (Sandspit River)	Conservation Area	TAS
Unnamed (The Lea)	Conservation Area	TAS
Wanabi	Conservation Covenant	TAS
Watch House Hills #1	Conservation Covenant	TAS
Watch House Hills #2	Conservation Covenant	TAS
Watch House Hills #3	Conservation Covenant	TAS
Waterfall Bay Road	Conservation Covenant	TAS
Waterfall Creek	State Reserve	TAS
Waterfall-Fortescue	Marine Conservation Area	TAS
Waterview Hill	Conservation Covenant	TAS
Waubadebars Grave	Historic Site	TAS
Wedge Island	Conservation Area	TAS
Whalebone Way - Benbullen	Conservation Covenant	TAS
Whalebone Way - Lighthouse Road	Conservation Covenant	TAS
Whalers Lookout	Conservation Area	TAS
Wielangta Road	Conservation Covenant	TAS
Wind Song	Conservation Covenant	TAS
Winifred Curtis Trust Scamander	Conservation Covenant	TAS
Woodbridge Hill	Conservation Area	TAS
Woolpack Hill	Conservation Covenant	TAS
Yellow Bluff Creek	Conservation Area	TAS

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
Tasmania RFA	Tasmania

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Calverts Lagoon	TAS
DArcys Lagoon	TAS
Douglas River	TAS
Earlham Lagoon	TAS
Freshwater Lagoon	TAS
Jocks Lagoon	TAS
Maria Island Marine Reserve	TAS
Moulting Lagoon	TAS
Orielton Lagoon	TAS
Oyster Cove	TAS
Unnamed Wetland	TAS

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Bellerive Beach Stormwater Outfall Upgrade	2024/09779		Completed
Darlington Wastewater Treatment Plant, Service Infrastructure and Water Supply Upgrade	2023/09596		Referral Decision
Duplication of Midway Point and Sorell Causeways	2024/10059		Assessment
H.B.M.I. Leslie Vale Quarry - capacity increase	2022/09412		Assessment
Huntingfield Master Plan ? Stage 2 and 3	2020/8869		Post-Approval
Kingston Bypass Stage 2 and Algona Road Upgrades	2023/09751		Assessment

Title of referral	Reference	Referral Outcome	Assessment Status
Macquarie Point Sewage Pump Station and Rising Main	2024/09822		Completed
Macquarie Wharf Redevelopment Project	2024/09903		Completed
Selfs Point Sewage Treatment Plant and Wastewater Pipeline	2023/09762		Completed
Tasman Highway Upgrade ? Hobart Airport to Sorell Causeway	2020/8805		Assessment
Tree Removal Between Sugarloaf & Sommers Bay Roads	2002/733		Completed
Triabunna Wind Farm	2023/09549		Referral Decision
Upgrade of water supply to the Coles Bay township and vicinity	2004/1778		Completed
Controlled action			
8 lot subdivision South Bruny Island	2010/5539	Controlled Action	Completed
Blackman Rivulet Dam at Bangor Farm	2009/5159	Controlled Action	Post-Approval
Cascades Female Factory History and Interpretation Centre	2020/8662	Controlled Action	Post-Approval
Construction of a Bypass Section	2008/4445	Controlled Action	Post-Approval
Demolition of Maclaines Creek Bridge, Tasman Highway	2007/3807	Controlled Action	Post-Approval
Development of 90 residential lots with associated public roads and underground	2004/1706	Controlled Action	Post-Approval
Duckhole Rivulet Dam	2009/4917	Controlled Action	Post-Approval
Extension of Flagstaff Quarry	2008/4210	Controlled Action	Post-Approval
Land rehabilitation following clearing	2008/4635	Controlled Action	Post-Approval
Lauderdale Quay Waterfront Housing and Marina Development	2006/3193	Controlled Action	Completed
Piano Cove Golf Course and Hotel	2020/8808	Controlled Action	Further Information Request

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Prosser River stabilisation, Orford, Tasmania	2016/7707	Controlled Action	Completed
Residential Development, West Moonah and Lenah Valley, Tas	2017/8111	Controlled Action	Post-Approval
Residential Subdivision, Lenah Valley and West Moonah	2010/5635	Controlled Action	Completed
Rokeby Main Road Upgrade	2011/6061	Controlled Action	Post-Approval
Sorell Causeway Bridge	2000/42	Controlled Action	Post-Approval
Springfarm Market Development	2010/5568	Controlled Action	Completed
Tasmania Natural Gas Project - Stage 3	2001/212	Controlled Action	Post-Approval
Not controlled action			
30 Lot Subdivision and Stormwater Upgrade	2011/5974	Not Controlled Action	Completed
50 Lot Subdivision Forcett Street	2011/6193	Not Controlled Action	Completed
64 lot residential subdivision on Penna Road	2007/3691	Not Controlled Action	Completed
Cascade Female Factory Historic Site Conservation Project	2009/4922	Not Controlled Action	Completed
Cascade Female Factory Historic Site Conservation Project	2009/4710	Not Controlled Action	Completed
conservation of the Separate Prison	2007/3399	Not Controlled Action	Completed
Construction of a new wastewater treatment plant	2006/3010	Not Controlled Action	Completed
Construction of distributor road Leeds Parade to Escort Way	2004/1379	Not Controlled Action	Completed
Development of a Bed & Breakfast	2012/6267	Not Controlled Action	Completed
Establishment of a mobile network telecommunications facility, Tinderbox, Tasmania	2012/6283	Not Controlled Action	Completed
Exploration Seismic survey	2001/516	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Huon Aquaculture Storm Bay off Trumpeter Bay, North Bruny Island, Tas	2018/8164	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Industrial development at 130 Main Street and 56-62 Forcett Street	2006/2972	Not Controlled Action	Completed
Industry/commercial precinct between Kennedy Rd and Tasman Hwy	2006/2557	Not Controlled Action	Completed
Installation and operation of treated sewerage marine outfall pipeline	2006/2971	Not Controlled Action	Completed
Marine Finfish Aquaculture Development, West of Wedge Island, Storm Bay Tas	2018/8207	Not Controlled Action	Completed
North West Bay - Electrona Wharf	2001/131	Not Controlled Action	Completed
Oceana Drive Residential Subdivision	2007/3749	Not Controlled Action	Completed
Petuna Storm Bay North Aquaculture Project, Tas	2018/8232	Not Controlled Action	Completed
Port Arthur Historic Penitentiary Precinct Conservation Project	2012/6531	Not Controlled Action	Completed
Port Arthur Historic site redevelopment of visitor centre, Tas	2016/7769	Not Controlled Action	Completed
Proposed subdivision, 70 Channel Highway, Kingston	2020/8742	Not Controlled Action	Completed
Redevelopment of reclaimed land	2001/532	Not Controlled Action	Completed
Relocation of Oyster Lease Areas	2003/1269	Not Controlled Action	Completed
Removal of bathroom addition in the Matron's Quarters, Cascades Female Factory Historic Site	2013/6743	Not Controlled Action	Completed
Replacement of ageing fire suppression system, Port Arthur Historic Site, TAS	2013/6921	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Residential Subdivision 166 Penna Road	2010/5537	Not Controlled Action	Completed
Residential Subdivision Brinsmead Road	2007/3847	Not Controlled Action	Completed
Sediment Quality and Geotechnical Investigation for Lauderdale Quay Development	2008/4119	Not Controlled Action	Completed
Simpsons Point Residential Development, Eco-Tourism Facility & Conservation Rese	2005/1959	Not Controlled Action	Completed
Subdivision of 68 ha into two blocks, construction of access road and house site	2004/1531	Not Controlled Action	Completed
Swan Valley Irrigation Scheme(SWAN)-Tasmania	2015/7560	Not Controlled Action	Completed
Tasman Highway - Holyman Avenue intersection upgrade, near Hobart International Airport, Tasmania	2017/8054	Not Controlled Action	Completed
Telstra Mobile Telecommunications Facility	2011/5837	Not Controlled Action	Completed
Translocation of DFTD-free Tasmanian Devils	2011/6216	Not Controlled Action	Completed
Upgrade of Fit-Out to Postal Hall	2009/4854	Not Controlled Action	Completed
Upgrade of runway 12/30 at Cambridge Airport	2007/3677	Not Controlled Action	Completed
Upgrade of the South Arm Highway from Shoreline Drive to Oceana Drive	2007/3526	Not Controlled Action	Completed
Not controlled action (particular manner)			
11 Lot Residential Subdivision	2012/6277	Not Controlled Action (Particular Manner)	Post-Approval
Coal River Valley water recycling scheme	2002/898	Not Controlled Action (Particular Manner)	Post-Approval
Development of 400ha of vineyard including the enlargement of a dam	2004/1882	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Replacement of the existing jetty and construction of a new jetty	2010/5787	Not Controlled Action (Particular Manner)	Post-Approval
Residential Building	2003/935	Not Controlled Action (Particular Manner)	Post-Approval
Residential Development	2002/901	Not Controlled Action (Particular Manner)	Post-Approval
Rosny Hill Lookout and Hotel	2021/9126	Not Controlled Action (Particular Manner)	Post-Approval
South East Irrigation Scheme	2013/6843	Not Controlled Action (Particular Manner)	Post-Approval
Tassal Finfish Aquaculture at Okehampton Bay, Tasmania	2017/7954	Not Controlled Action (Particular Manner)	Post-Approval
Three Capes Track	2011/6200	Not Controlled Action (Particular Manner)	Post-Approval
Wet Marsh Dam - increase of storage capacity	2004/1442	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
18 Lot Residential Subdivision	2008/4643	Referral Decision	Completed
Enlargement of existing farm dam to irrigate a vineyard	2004/1853	Referral Decision	Completed
Hobart Airport runway extension, Tas	2014/7311	Referral Decision	Completed
North West Bay Sewer Scheme	2005/1989	Referral Decision	Completed
Okines Beach, Lewisham ??? Foreshore Erosion Mitigation	2021/8940	Referral Decision	Referral Publication

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
Seamounts South and east of Tasmania	South-east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna grisea Sooty Shearwater [82651]	Breeding	Known to occur
Ardenna grisea Sooty Shearwater [82651]	Foraging	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known 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
Morus serrator Australasian Gannet [1020]	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]	Breeding	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Breeding	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Known to occur
Pterodroma mollis Soft-plumaged Petrel [1036]	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 chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging likely	Likely to occur
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	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 is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Jul-2025

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Figure: Central NSW Environmental Sector

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:	3
National Heritage Places:	15
Wetlands of International Importance (Ramsar	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	7
Listed Threatened Ecological Communities:	24
Listed Threatened Species:	250
Listed Migratory Species:	92

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:	703
Commonwealth Heritage Places:	77
Listed Marine Species:	147
Whales and Other Cetaceans:	39
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	2
Australian Marine Parks:	14
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:	147
Regional Forest Agreements:	2
Nationally Important Wetlands:	43
EPBC Act Referrals:	274
Key Ecological Features (Marine):	6
Biologically Important Areas:	59
Bioregional Assessments:	3
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties		[Resource Information]
Name	State	Legal Status
Australian Convict Sites (Hyde Park Barracks)	NSW	Declared property
Lord Howe Island Group	NSW	Declared property
Sydney Opera House	NSW	Declared property

National Heritage Places		[Resource Information]
Name	State	Legal Status
Historic		
Bondi Beach	NSW	Listed place
Bondi Surf Pavilion	NSW	Within listed place
Centennial Park	NSW	Listed place
First Government House Site	NSW	Listed place
Governors' Domain and Civic Precinct	NSW	Listed place
Hyde Park Barracks	NSW	Listed place
Kamay Botany Bay: botanical collection sites	NSW	Listed place
Kurnell Peninsula Headland	NSW	Listed place
North Head - Sydney	NSW	Listed place
Sydney Harbour Bridge	NSW	Listed place
Sydney Opera House	NSW	Listed place
Indigenous		
Cyprus Hellene Club - Australian Hall	NSW	Listed place
Natural		
Ku-ring-gai Chase National Park, Lion, Long and Spectacle Island Nature Reserves	NSW	Listed place
Lord Howe Island Group	NSW	Listed place
Royal National Park and Garawarra State Conservation Area	NSW	Listed place

Wetlands of International Importance (Ramsar Wetlands)	[Resource Information]
Ramsar Site Name	Proximity

Ramsar Site Name	Proximity
Hunter estuary wetlands	Within Ramsar site
Myall lakes	Within Ramsar site
Towra point nature reserve	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)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
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
Araluen Scarp Grassy Forest	Endangered	Community may occur within area
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	Endangered	Community may occur within area
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community may occur within area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered	Community likely to occur within area
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occur within area
Dunn's white gum (Eucalyptus dunnii) moist forest in north-east New South Wales and south-east Queensland	Endangered	Community may occur within area
Eastern Suburbs Banksia Scrub of the Sydney Region	Critically Endangered	Community likely to occur within area
Illawarra and south coast lowland forest and woodland ecological community	Critically Endangered	Community likely to occur within area
Illawarra-Shoalhaven Subtropical Rainforest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
Kurri sand swamp woodland of the Sydney Basin bioregion	Endangered	Community may 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 likely to occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area
Posidonia australis seagrass meadows of the Manning-Hawkesbury ecoregion	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
Robertson Rainforest in the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
Shale Sandstone Transition Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion	Endangered	Community may occur within area
Western Sydney Dry Rainforest and Moist Woodland on Shale	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
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
Atrichornis rufescens Rufous Scrub-bird [655]	Endangered	Species or species habitat may 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

Scientific Name	Threatened Category	Presence Text
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
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 known to occur within area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	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

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Breeding known 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
Hypotaenidia sylvestris Lord Howe Woodhen [87732]	Endangered	Breeding likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	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
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat known to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
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 may occur within area

Scientific Name	Threatened Category	Presence Text
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area
Pterodroma heraldica Herald Petrel [66973]	Critically Endangered	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Breeding known to occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour 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 known to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area
Strepera graculina crissalis Lord Howe Island Currawong, Pied Currawong (Lord Howe Island) [25994]	Vulnerable	Species or species habitat known to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	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
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
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area
FISH		
[Amphiprion mccullochi](#) Whitesnout Anemonefish, McCulloch's Anemonefish [76925]	Critically Endangered	Species or species habitat known to occur within area
[Epinephelus daemelii](#) Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
[Hippocampus whitei](#) White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	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
[Maccullochella peelii](#) Murray Cod [66633]	Vulnerable	Translocated population known to occur within area
[Macquaria australasica](#) Macquarie Perch [66632]	Endangered	Translocated population known to occur within area
[Mordacia praecox](#) Non-parasitic Lamprey, Precocious Lamprey [81530]	Endangered	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
[Seriolella brama](#) Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		

Scientific Name	Threatened Category	Presence Text
Assa darlingtoni Pouched Frog [1965]	Vulnerable	Species or species habitat known to occur within area
Heleioporus australiacus australiacus Giant Burrowing Frog, Eastern Owl Frog [92013]	Endangered	Species or species habitat known to occur within area
Heleioporus australiacus flavopunctatus Southern Owl Frog, Southern Giant Burrowing Frog [92014]	Endangered	Species or species habitat known to occur within area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria littlejohni Northern Heath Frog, Littlejohn's Tree Frog [64733]	Endangered	Species or species habitat known to occur within area
Litoria olongburensis Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat likely to occur within area
Litoria watsoni Southern Heath Frog, Watson's Tree Frog [91509]	Endangered	Species or species habitat likely to occur within area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat known to occur within area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat known to occur within area
Philoria sphagnicola Sphagnum Frog [59709]	Vulnerable	Species or species habitat may occur within area
Uperoleia mahonyi Mahony's Toadlet [89189]	Endangered	Species or species habitat known to occur within area
INSECT		

Scientific Name	Threatened Category	Presence Text
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat likely to occur within area
Austrocordulia leonardi Sydney Hawk Dragonfly [84741]	Endangered	Species or species habitat likely to occur within area
Cormodes darwini a beetle [92235]	Critically Endangered	Species or species habitat known to occur within area
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Species or species habitat known to occur within area
Promethis sterrha a beetle [92260]	Critically Endangered	Species or species habitat known to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known 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

Scientific Name	Threatened Category	Presence Text
Isoodon obesulus obesulus		
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area
Notamacropus parma		
Parma Wallaby [89289]	Vulnerable	Species or species habitat likely to occur within area
Nyctophilus corbeni		
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	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
Petrogale penicillata		
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may 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 known to occur within area
Potorous tridactylus tridactylus		
Long-nosed Potoroo (northern) [66645]	Vulnerable	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 novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area

OTHER

Scientific Name	Threatened Category	Presence Text
Dendronephthya australis Cauliflower Soft Coral [90325]	Endangered	Species or species habitat known to occur within area
Pericryptodrilus nanus Lord Howe Earthworm [84736]	Critically Endangered	Species or species habitat known to occur within area
PLANT		
Acacia baueri subsp. aspera [18662]	Endangered	Species or species habitat known to occur within area
Acacia bynoeana Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat known to occur within area
Acacia courtii Three Brothers Wattle, Brother Wattle, Northern Brother Wattle [56299]	Endangered	Species or species habitat likely to occur within area
Acacia pubescens Downy Wattle, Hairy Stemmed Wattle [18800]	Vulnerable	Species or species habitat known to occur within area
Acacia terminalis subsp. Eastern Sydney (G.P.Phillips 126) listed as Acacia terminalis subsp. terminalis MS Sunshine Wattle (Sydney region) [91564]	Endangered	Species or species habitat known to occur within area
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat known to occur within area
Allocasuarina defungens Dwarf Heath Casuarina [21924]	Endangered	Species or species habitat known to occur within area
Allocasuarina glareicola [21932]	Endangered	Species or species habitat may occur within area
Allocasuarina portuensis Nielsen Park She-oak [21937]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Allocasuarina simulans Nabiac Casuarina [21935]	Vulnerable	Species or species habitat known to occur within area
Allocasuarina thalassoscopica [21927]	Endangered	Species or species habitat known to occur within area
Angophora inopina Charmhaven Apple [64832]	Vulnerable	Species or species habitat known to occur within area
Angophora robur Sandstone Rough-barked Apple [56088]	Vulnerable	Species or species habitat may occur within area
Anthosachne kingiana subsp. kingiana Phillip Island Wheat Grass [87946]	Critically Endangered	Species or species habitat known to occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat known to occur within area
Asperula asthenes Trailing Woodruff [14004]	Vulnerable	Species or species habitat known to occur within area
Asterolasia elegans [56780]	Endangered	Species or species habitat known to occur within area
Astrotricha crassifolia Thick-leaf Star-hair [10352]	Vulnerable	Species or species habitat known to occur within area
Baloskion longipes Dense Cord-rush [68511]	Vulnerable	Species or species habitat may occur within area
Banksia vincentia [88276]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Bertya sp. Clouds Creek (M.Fatemi 4) [84675]	Endangered	Species or species habitat may occur within area
Boronia deanei subsp. acutifolia [78946]	Endangered	Species or species habitat may occur within area
Boronia umbellata Orara Boronia [56301]	Vulnerable	Species or species habitat known 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 known to occur within area
Calystegia affinis [48909]	Critically Endangered	Species or species habitat known to occur within area
Coleus nitidus listed as Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [91380]	Endangered	Species or species habitat likely to occur within area
Commersonia prostrata Dwarf Kerrawang [87152]	Endangered	Species or species habitat known to occur within area
Correa baeuerlenii Chef's Cap [17007]	Vulnerable	Species or species habitat likely to occur within area
Corunastylis insignis Wyong Midge Orchid 1, Variable Midge Orchid 1 [84692]	Critically Endangered	Species or species habitat known to occur within area
Corunastylis littoralis Tuncurry Midge Orchid [82945]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Corunastylis vernalis listed as Genoplesium vernale		
East Lynne Midge-orchid [78699]	Vulnerable	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
Cynanchum elegans		
White-flowered Wax Plant [12533]	Endangered	Species or species habitat known to occur within area
Daphnandra johnsonii		
Illawarra Socketwood [67186]	Endangered	Species or species habitat known to occur within area
Darwinia biflora		
[14619]	Vulnerable	Species or species habitat known to occur within area
Diuris praecox		
Newcastle Doubletail [55086]	Vulnerable	Species or species habitat known to occur within area
Endiandra hayesii		
Rusty Rose Walnut, Velvet Laurel [13866]	Vulnerable	Species or species habitat known to occur within area
Eriocaulon australasicum		
Austral Pipewort, Southern Pipewort [7649]	Endangered	Species or species habitat may occur within area
Eucalyptus camfieldii		
Camfield's Stringybark [15460]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus glaucina		
Slaty Red Gum [5670]	Vulnerable	Species or species habitat may occur within area
Eucalyptus parramattensis subsp. decadens		
Earp's Gum, Earp's Dirty Gum [56148]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Eucalyptus stenostoma Jillaga Ash [3976]	Endangered	Species or species habitat may occur within area
Eucalyptus tetrapleura Square-fruited Ironbark [7490]	Vulnerable	Species or species habitat may occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
Fontainea sp. Coffs Harbour (A.S.Benwell 341, NSW1102027) [91784]	Critically Endangered	Species or species habitat known to occur within area
Gaudium deanei listed as Leptospermum deanei Deane's Tea-tree [94344]	Vulnerable	Species or species habitat likely to occur within area
Geniostoma huttonii [56368]	Endangered	Species or species habitat known to occur within area
Genoplesium baueri Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat known to occur within area
Genoplesium branwhiteorum listed as Corunastylis sp. Charmhaven (NSW 896673) [93200]	Critically Endangered (listed as Corunastylis sp. Charmhaven	Species or species habitat likely to occur within area
Grevillea caleyi Caley's Grevillea [9683]	Critically Endangered	Species or species habitat known to occur within area
Grevillea parviflora subsp. parviflora Small-flower Grevillea [64910]	Vulnerable	Species or species habitat known to occur within area
Grevillea shiressii [19186]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. velutina Tall Velvet Sea-berry [16839]	Vulnerable	Species or species habitat may occur within area
Haloragodendron lucasii Hal [6480]	Endangered	Species or species habitat likely to occur within area
Hibbertia acaulothrix [87409]	Endangered	Species or species habitat may occur within area
Hicksbeachia pinnatifolia Monkey Nut, Bopple Nut, Red Bopple, Red Bopple Nut, Red Nut, Beef Nut, Red Apple Nut, Red Boppel Nut, Ivory Silky Oak [21189]	Vulnerable	Species or species habitat known to occur within area
Irenepharsus trypherus Delicate Cress, Illawarra Irene [14664]	Endangered	Species or species habitat may occur within area
Kunzea rupestris [8798]	Vulnerable	Species or species habitat known to occur within area
Lasiopetalum joyceae [20311]	Vulnerable	Species or species habitat known to occur within area
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat known to occur within area
Lepidorrhachis mooreana Little Mountain Palm, Moorei Palm [6388]	Critically Endangered	Species or species habitat known to occur within area
Leucopogon exolasius Woronora Beard-heath [14251]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat known to occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat known to occur within area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat known to occur within area
Melaleuca deanei Deane's Melaleuca [5818]	Vulnerable	Species or species habitat known to occur within area
Micromyrtus blakelyi [6870]	Vulnerable	Species or species habitat known to occur within area
Microtis angusii Angus's Onion Orchid [64530]	Endangered	Species or species habitat likely to occur within area
Olax angulata Minnie Waters Olax [10666]	Vulnerable	Species or species habitat may occur within area
Owenia cepiodora Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat may occur within area
Parsonsia dorrigoensis Milky Silkpod [64684]	Endangered	Species or species habitat known to occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat known to occur within area
Persoonia bargoensis Bargo Geebung [56267]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Persoonia hirsuta Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat known to occur within area
Persoonia mollis subsp. maxima [56075]	Endangered	Species or species habitat may occur within area
Persoonia nutans Nodding Geebung [18119]	Endangered	Species or species habitat known to occur within area
Persoonia oxycoccoides [16114]	Endangered	Species or species habitat may occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat known to occur within area
Pimelea curviflora var. curviflora [4182]	Vulnerable	Species or species habitat known to occur within area
Pimelea spicata Spiked Rice-flower [20834]	Endangered	Species or species habitat known to occur within area
Polystichum moorei Rock Shield Fern [40755]	Endangered	Species or species habitat likely to occur within area
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat likely to occur within area
Prasophyllum affine Jervis Bay Leek Orchid, Culburra Leek-orchid, Kinghorn Point Leek-orchid [2210]	Endangered	Species or species habitat known to occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Prostanthera askania Tranquillity Mintbush, Tranquility Mintbush [64958]	Endangered	Species or species habitat known to occur within area
Prostanthera densa Villous Mintbush [12233]	Vulnerable	Species or species habitat known to occur within area
Prostanthera junonis Somersby Mintbush [64960]	Endangered	Species or species habitat known to occur within area
Prostanthera marifolia Seaforth Mintbush [7555]	Critically Endangered	Species or species habitat known to occur within area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat known to occur within area
Pterostylis saxicola Sydney Plains Greenhood [64537]	Endangered	Species or species habitat likely to occur within area
Pterostylis sp. Botany Bay (A.Bishop J221/1-13) Botany Bay Bearded Greenhood, Botany Bay Bearded Orchid [64965]	Endangered	Species or species habitat likely to occur within area
Pterostylis vernalis Halbury Rustyhood [84711]	Critically Endangered	Species or species habitat may occur within area
Pultenaea aristata [18062]	Vulnerable	Species or species habitat known to occur within area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat known to occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area
Rutidosis heterogama Heath Wrinklewort [13132]	Vulnerable	Species or species habitat known to occur within area
Samadera sp. Moonee Creek (J.King s.n. Nov. 1949) [86885]	Endangered	Species or species habitat known to occur within area
Sarcochilus fitzgeraldii Ravine Orchid [19131]	Vulnerable	Species or species habitat likely to occur within area
Solanum sulphureum [87381]	Endangered	Species or species habitat likely to occur within area
Syzygium hodgkinsoniae Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat may occur within area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area
Tetratheca juncea Black-eyed Susan [21407]	Vulnerable	Species or species habitat known to occur within area
Thelymitra adorata Wyong Sun Orchid [84724]	Critically Endangered	Species or species habitat known to occur within area
Thelymitra kangaloonica Kangaloon Sun Orchid [81861]	Critically Endangered	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Triplarina nowraensis Nowra Heath-myrtle [64544]	Endangered	Species or species habitat known to occur within area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat known to occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area
Xylosma parvifolia [48040]	Endangered	Species or species habitat known to occur within area
Zieria granulata Hill Zieria, Hilly Zieria, Illawarra Zieria [17147]	Endangered	Species or species habitat likely to occur within area
Zieria involucrata [3087]	Vulnerable	Species or species habitat may occur within area
Zieria prostrata Headland Zieria [56782]	Endangered	Species or species habitat known to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Christinus guentheri Lord Howe Island Gecko, Lord Howe Island Southern Gecko [59250]	Vulnerable	Species or species habitat known to occur within area
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Hoplocephalus bungaroides Broad-headed Snake [1182]	Endangered	Species or species habitat known to occur within area
Myuchelys georgesi listed as Wollumbinia georgesi Bellinger River Snapping Turtle, Georges' Snapping Turtle, Georges Helmeted Turtle [88103]	Critically Endangered	Species or species habitat may occur within area
Myuchelys purvisi Purvis' Turtle [89459]	Endangered	Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Oligosoma lichenigerum Lord Howe Island Skink [91467]	Vulnerable	Species or species habitat known to occur within area
Saltuarius moritzi New England Leaf-tailed Gecko, Moritz's Leaf-tailed Gecko [89490]	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	Congregation or aggregation known to 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

Scientific Name	Threatened Category	Presence Text
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 may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area
SNAIL		
Gudeoconcha sophiae magnifica		
Magnificent Helicarionid Land Snail [82864]	Critically Endangered	Species or species habitat likely to occur within area
Meridolum maryae		
Maroubra Woodland Snail, Maroubra Land Snail [89884]	Endangered	Species or species habitat known to occur within area
Mystivagor mastersi		
Masters' Charopid Land Snail [81247]	Critically Endangered	Species or species habitat known to occur within area
Placostylus bivaricosus		
Lord Howe Flax Snail, Lord Howe Placostylus [66769]	Endangered	Species or species habitat known to occur within area
Pseudocharopa ledgbirdi		
Mount Lidgbird Charopid Land Snail [85279]	Critically Endangered	Species or species habitat likely to occur within area
Pseudocharopa whiteleggei		
Whitelegge's Land Snail [81249]	Critically Endangered	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		

Scientific Name	Threatened Category	Presence Text
Anous stolidus Common Noddy [825]		Breeding known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Breeding known to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		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 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	Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat 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

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat may 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
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Carcharias taurus Grey Nurse Shark [64469]		Congregation or aggregation known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding 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
Dugong dugon Dugong [28]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
Isurus paucus Longfin Mako [82947]		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
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour 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		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		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
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris subminuta Long-toed Stint [861]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
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]		Roosting 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
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
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

Scientific Name	Threatened Category	Presence Text
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Breeding 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]		Foraging, feeding or related behaviour known to occur within area
Tringa incana Wandering Tattler [831]		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
Australian Academy of Science	
Commonwealth Land - Australian Academy of Science [12031]	NSW
Australian National University	
Commonwealth Land - Australian National University [12019]	NSW
Commonwealth Land - Australian National University [13156]	NSW
Commonwealth Land - Australian National University [15737]	NSW
Commonwealth Land - Australian National University [12024]	NSW
Commonwealth Land - Australian National University [12022]	NSW
Commonwealth Land - Australian National University [12023]	NSW
Commonwealth Land - Australian National University [12021]	NSW
Commonwealth Bank of Australia	
Commonwealth Land - Commonwealth Bank of Australia [11596]	NSW
Commonwealth Land - Commonwealth Bank of Australia [11813]	NSW
Commonwealth Land - Commonwealth Bank of Australia [14331]	NSW
Commonwealth Land - Commonwealth Bank of Australia [13158]	NSW
Commonwealth Trading Bank of Australia	
Commonwealth Land - Commonwealth Trading Bank of Australia [11591]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [11685]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [11682]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [13209]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [12017]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [14337]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [11703]	NSW

Commonwealth Land Name	State
Commonwealth Land - Commonwealth Trading Bank of Australia [12224]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [12202]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [12203]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [12020]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [14325]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [14323]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [14322]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [11726]	NSW
Communications, Information Technology and the Arts - Australian Broadcasting Corporation	
Commonwealth Land - Australian Broadcasting Corporation [11595]	NSW
Commonwealth Land - Australian Broadcasting Corporation [15511]	NSW
Communications, Information Technology and the Arts - Australian Postal Corporation	
Commonwealth Land - Australian Postal Commission [13215]	NSW
Commonwealth Land - Australian Postal Commission [16431]	NSW
Commonwealth Land - Australian Postal Commission [11360]	NSW
Commonwealth Land - Australian Postal Commission [11377]	NSW
Commonwealth Land - Australian Postal Commission [11592]	NSW
Commonwealth Land - Australian Postal Commission [11593]	NSW
Commonwealth Land - Australian Postal Commission [11594]	NSW
Commonwealth Land - Australian Postal Commission [13239]	NSW
Commonwealth Land - Australian Postal Commission [12078]	NSW
Commonwealth Land - Australian Postal Commission [11811]	NSW
Commonwealth Land - Australian Postal Commission [11680]	NSW
Commonwealth Land - Australian Postal Commission [14366]	NSW
Commonwealth Land - Australian Postal Commission [11687]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Postal Commission [14391]	NSW
Commonwealth Land - Australian Postal Commission [12016]	NSW
Commonwealth Land - Australian Postal Commission [15538]	NSW
Commonwealth Land - Australian Postal Commission [16105]	NSW
Commonwealth Land - Australian Postal Commission [11344]	NSW
Commonwealth Land - Australian Postal Commission [13228]	NSW
Commonwealth Land - Australian Postal Commission [13137]	NSW
Commonwealth Land - Australian Postal Commission [13224]	NSW
Commonwealth Land - Australian Postal Commission [13153]	NSW
Commonwealth Land - Australian Postal Commission [11893]	NSW
Commonwealth Land - Australian Postal Commission [14284]	NSW
Commonwealth Land - Australian Postal Commission [14280]	NSW
Commonwealth Land - Australian Postal Commission [12225]	NSW
Commonwealth Land - Australian Postal Commission [12205]	NSW
Commonwealth Land - Australian Postal Commission [13195]	NSW
Commonwealth Land - Australian Postal Commission [13193]	NSW
Commonwealth Land - Australian Postal Commission [13192]	NSW
Commonwealth Land - Australian Postal Commission [14329]	NSW
Commonwealth Land - Australian Postal Commission [14326]	NSW
Commonwealth Land - Australian Postal Commission [14324]	NSW
Commonwealth Land - Australian Postal Commission [13291]	NSW
Commonwealth Land - Australian Postal Commission [11710]	NSW
Commonwealth Land - Australian Postal Commission [13290]	NSW
Commonwealth Land - Australian Postal Commission [11724]	NSW
Commonwealth Land - Australian Postal Commission [14338]	NSW
Commonwealth Land - Australian Postal Commission [15537]	NSW
Commonwealth Land - Australian Postal Commission [14355]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Postal Commission [14350]	NSW
Commonwealth Land - Australian Postal Corporation [13214]	NSW
Commonwealth Land - Australian Postal Corporation [15448]	NSW
Commonwealth Land - Australian Postal Corporation [14343]	NSW
Commonwealth Land - Australian Postal Corporation [14342]	NSW
Commonwealth Land - Australian Postal Corporation [16525]	NSW
Commonwealth Land - Australian Postal Corporation [12072]	NSW
Commonwealth Land - Australian Postal Corporation [11690]	NSW
Commonwealth Land - Australian Postal Corporation [16021]	NSW
Commonwealth Land - Australian Postal Corporation [12073]	NSW
Commonwealth Land - Australian Postal Corporation [11771]	NSW
Commonwealth Land - Australian Postal Corporation [13152]	NSW
Commonwealth Land - Australian Postal Corporation [12227]	NSW
Commonwealth Land - Australian Postal Corporation [12226]	NSW
Commonwealth Land - Australian Postal Corporation [12207]	NSW
Commonwealth Land - Australian Postal Corporation [16009]	NSW
Communications, Information Technology and the Arts - Telstra Corporation Limited	
Commonwealth Land - Australian & Overseas Telecommunications Corporation [11686]	NSW
Commonwealth Land - Australian & Overseas Telecommunications Corporation [13155]	NSW
Commonwealth Land - Australian & Overseas Telecommunications Corporation [14359]	NSW
Commonwealth Land - Australian Telecommunications Commission [11511]	NSW
Commonwealth Land - Australian Telecommunications Commission [16081]	NSW
Commonwealth Land - Australian Telecommunications Commission [11514]	NSW
Commonwealth Land - Australian Telecommunications Commission [11515]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [11512]	NSW
Commonwealth Land - Australian Telecommunications Commission [11513]	NSW
Commonwealth Land - Australian Telecommunications Commission [14379]	NSW
Commonwealth Land - Australian Telecommunications Commission [13216]	NSW
Commonwealth Land - Australian Telecommunications Commission [16433]	NSW
Commonwealth Land - Australian Telecommunications Commission [15430]	NSW
Commonwealth Land - Australian Telecommunications Commission [11742]	NSW
Commonwealth Land - Australian Telecommunications Commission [12036]	NSW
Commonwealth Land - Australian Telecommunications Commission [15509]	NSW
Commonwealth Land - Australian Telecommunications Commission [13157]	NSW
Commonwealth Land - Australian Telecommunications Commission [13194]	NSW
Commonwealth Land - Australian Telecommunications Commission [12215]	NSW
Commonwealth Land - Australian Telecommunications Commission [11597]	NSW
Commonwealth Land - Australian Telecommunications Commission [11674]	NSW
Commonwealth Land - Australian Telecommunications Commission [13231]	NSW
Commonwealth Land - Australian Telecommunications Commission [11780]	NSW
Commonwealth Land - Australian Telecommunications Commission [13129]	NSW
Commonwealth Land - Australian Telecommunications Commission [11810]	NSW
Commonwealth Land - Australian Telecommunications Commission [11814]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [11812]	NSW
Commonwealth Land - Australian Telecommunications Commission [12058]	NSW
Commonwealth Land - Australian Telecommunications Commission [12246]	NSW
Commonwealth Land - Australian Telecommunications Commission [11681]	NSW
Commonwealth Land - Australian Telecommunications Commission [16092]	NSW
Commonwealth Land - Australian Telecommunications Commission [14381]	NSW
Commonwealth Land - Australian Telecommunications Commission [12015]	NSW
Commonwealth Land - Australian Telecommunications Commission [11661]	NSW
Commonwealth Land - Australian Telecommunications Commission [12014]	NSW
Commonwealth Land - Australian Telecommunications Commission [12010]	NSW
Commonwealth Land - Australian Telecommunications Commission [11768]	NSW
Commonwealth Land - Australian Telecommunications Commission [11769]	NSW
Commonwealth Land - Australian Telecommunications Commission [11389]	NSW
Commonwealth Land - Australian Telecommunications Commission [11387]	NSW
Commonwealth Land - Australian Telecommunications Commission [11386]	NSW
Commonwealth Land - Australian Telecommunications Commission [11600]	NSW
Commonwealth Land - Australian Telecommunications Commission [11336]	NSW
Commonwealth Land - Australian Telecommunications Commission [11337]	NSW
Commonwealth Land - Australian Telecommunications Commission [11339]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [11338]	NSW
Commonwealth Land - Australian Telecommunications Commission [11831]	NSW
Commonwealth Land - Australian Telecommunications Commission [12059]	NSW
Commonwealth Land - Australian Telecommunications Commission [11345]	NSW
Commonwealth Land - Australian Telecommunications Commission [11340]	NSW
Commonwealth Land - Australian Telecommunications Commission [11348]	NSW
Commonwealth Land - Australian Telecommunications Commission [11392]	NSW
Commonwealth Land - Australian Telecommunications Commission [11708]	NSW
Commonwealth Land - Australian Telecommunications Commission [11805]	NSW
Commonwealth Land - Australian Telecommunications Commission [13222]	NSW
Commonwealth Land - Australian Telecommunications Commission [13223]	NSW
Commonwealth Land - Australian Telecommunications Commission [13136]	NSW
Commonwealth Land - Australian Telecommunications Commission [11662]	NSW
Commonwealth Land - Australian Telecommunications Commission [13221]	NSW
Commonwealth Land - Australian Telecommunications Commission [13225]	NSW
Commonwealth Land - Australian Telecommunications Commission [13226]	NSW
Commonwealth Land - Australian Telecommunications Commission [15461]	NSW
Commonwealth Land - Australian Telecommunications Commission [16280]	NSW
Commonwealth Land - Australian Telecommunications Commission [11894]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [11892]	NSW
Commonwealth Land - Australian Telecommunications Commission [13154]	NSW
Commonwealth Land - Australian Telecommunications Commission [11701]	NSW
Commonwealth Land - Australian Telecommunications Commission [11888]	NSW
Commonwealth Land - Australian Telecommunications Commission [11889]	NSW
Commonwealth Land - Australian Telecommunications Commission [11887]	NSW
Commonwealth Land - Australian Telecommunications Commission [16473]	NSW
Commonwealth Land - Australian Telecommunications Commission [11702]	NSW
Commonwealth Land - Australian Telecommunications Commission [11700]	NSW
Commonwealth Land - Australian Telecommunications Commission [14285]	NSW
Commonwealth Land - Australian Telecommunications Commission [14281]	NSW
Commonwealth Land - Australian Telecommunications Commission [11752]	NSW
Commonwealth Land - Australian Telecommunications Commission [12223]	NSW
Commonwealth Land - Australian Telecommunications Commission [11754]	NSW
Commonwealth Land - Australian Telecommunications Commission [12008]	NSW
Commonwealth Land - Australian Telecommunications Commission [11753]	NSW
Commonwealth Land - Australian Telecommunications Commission [15450]	NSW
Commonwealth Land - Australian Telecommunications Commission [14279]	NSW
Commonwealth Land - Australian Telecommunications Commission [11361]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [11827]	NSW
Commonwealth Land - Australian Telecommunications Commission [13241]	NSW
Commonwealth Land - Australian Telecommunications Commission [13240]	NSW
Commonwealth Land - Australian Telecommunications Commission [12025]	NSW
Commonwealth Land - Australian Telecommunications Commission [11648]	NSW
Commonwealth Land - Australian Telecommunications Commission [14327]	NSW
Commonwealth Land - Australian Telecommunications Commission [13293]	NSW
Commonwealth Land - Australian Telecommunications Commission [12038]	NSW
Commonwealth Land - Australian Telecommunications Commission [12037]	NSW
Commonwealth Land - Australian Telecommunications Commission [11350]	NSW
Commonwealth Land - Australian Telecommunications Commission [11354]	NSW
Commonwealth Land - Australian Telecommunications Commission [11353]	NSW
Commonwealth Land - Australian Telecommunications Commission [11384]	NSW
Commonwealth Land - Australian Telecommunications Commission [14404]	NSW
Commonwealth Land - Australian Telecommunications Commission [11713]	NSW
Commonwealth Land - Australian Telecommunications Commission [11715]	NSW
Commonwealth Land - Australian Telecommunications Commission [11714]	NSW
Commonwealth Land - Australian Telecommunications Commission [11719]	NSW
Commonwealth Land - Australian Telecommunications Commission [11722]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [11723]	NSW
Commonwealth Land - Australian Telecommunications Commission [14356]	NSW
Commonwealth Land - Australian Telecommunications Commission [14351]	NSW
Commonwealth Land - Australian Telecommunications Commission [13162]	NSW
Commonwealth Land - Australian Telecommunications Commission [11853]	NSW
Commonwealth Land - Australian Telecommunications Corporation [14286]	NSW
Commonwealth Land - Australian Telecommunications Corporation [13292]	NSW
Commonwealth Land - Australian Telecommunications Corporation [11641]	NSW
Commonwealth Land - Telstra Corporation Limited [13213]	NSW
Commonwealth Land - Telstra Corporation Limited [15445]	NSW
Commonwealth Land - Telstra Corporation Limited [11378]	NSW
Commonwealth Land - Telstra Corporation Limited [11379]	NSW
Commonwealth Land - Telstra Corporation Limited [14349]	NSW
Commonwealth Land - Telstra Corporation Limited [12075]	NSW
Commonwealth Land - Telstra Corporation Limited [16419]	NSW
Commonwealth Land - Telstra Corporation Limited [11689]	NSW
Commonwealth Land - Telstra Corporation Limited [14368]	NSW
Commonwealth Land - Telstra Corporation Limited [11385]	NSW
Commonwealth Land - Telstra Corporation Limited [11380]	NSW
Commonwealth Land - Telstra Corporation Limited [14332]	NSW
Commonwealth Land - Telstra Corporation Limited [14333]	NSW
Commonwealth Land - Telstra Corporation Limited [12076]	NSW
Commonwealth Land - Telstra Corporation Limited [11394]	NSW
Commonwealth Land - Telstra Corporation Limited [11802]	NSW

Commonwealth Land Name	State
Commonwealth Land - Telstra Corporation Limited [11381]	NSW
Commonwealth Land - Telstra Corporation Limited [14287]	NSW
Commonwealth Land - Telstra Corporation Limited [14283]	NSW
Commonwealth Land - Telstra Corporation Limited [14282]	NSW
Commonwealth Land - Telstra Corporation Limited [12204]	NSW
Commonwealth Land - Telstra Corporation Limited [13187]	NSW
Commonwealth Land - Telstra Corporation Limited [12039]	NSW
Commonwealth Land - Telstra Corporation Limited [16445]	NSW
Commonwealth Land - Telstra Corporation Limited [11711]	NSW
Commonwealth Land - Telstra Corporation Limited [11382]	NSW
Commonwealth Land - Telstra Corporation Limited [15407]	NSW
Defence	
Commonwealth Land - Defence Service Homes Corporation [13211]	NSW
Commonwealth Land - Defence Service Homes Corporation [14352]	NSW
Commonwealth Land - Defence Service Homes Corporation [11699]	NSW
Commonwealth Land - Defence Service Homes Corporation [11694]	NSW
Commonwealth Land - Defence Service Homes Corporation [11698]	NSW
Commonwealth Land - Defence Service Homes Corporation [11598]	NSW
Commonwealth Land - Defence Service Homes Corporation [11675]	NSW
Commonwealth Land - Defence Service Homes Corporation [11679]	NSW
Commonwealth Land - Defence Service Homes Corporation [11815]	NSW
Commonwealth Land - Defence Service Homes Corporation [14360]	NSW
Commonwealth Land - Defence Service Homes Corporation [14363]	NSW
Commonwealth Land - Defence Service Homes Corporation [11693]	NSW
Commonwealth Land - Defence Service Homes Corporation [11691]	NSW
Commonwealth Land - Defence Service Homes Corporation [11695]	NSW
Commonwealth Land - Defence Service Homes Corporation [11697]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Service Homes Corporation [11692]	NSW
Commonwealth Land - Defence Service Homes Corporation [11705]	NSW
Commonwealth Land - Defence Service Homes Corporation [15946]	NSW
Commonwealth Land - Defence Service Homes Corporation [11809]	NSW
Commonwealth Land - Defence Service Homes Corporation [13210]	NSW
Commonwealth Land - Defence Service Homes Corporation [11896]	NSW
Commonwealth Land - Defence Service Homes Corporation [11897]	NSW
Commonwealth Land - Defence Service Homes Corporation [11895]	NSW
Commonwealth Land - Defence Service Homes Corporation [11524]	NSW
Commonwealth Land - Defence Service Homes Corporation [11696]	NSW
Commonwealth Land - Defence Service Homes Corporation [11359]	NSW
Commonwealth Land - Defence Service Homes Corporation [13220]	NSW
Commonwealth Land - Defence Service Homes Corporation [14357]	NSW
Commonwealth Land - Defence Service Homes Corporation & Alice Isabel Patterson [14377]	NSW
Commonwealth Land - Director of Defence Service Homes [13208]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11219]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11229]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11225]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11222]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11227]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11226]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11221]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11220]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11224]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11228]	NSW
Defence - ADF CAREERS REFERENCE CENTRE [11223]	NSW

Commonwealth Land Name	State
Defence - BANKSMEADOW DEPOT (Sydney Workshop Company) [11116]	NSW
Defence - BANKSMEADOW DEPOT (Sydney Workshop Company) [11117]	NSW
Defence - BEECROFT RAPIER RANGE [10048]	NSW
Defence - BEECROFT RAPIER RANGE [10049]	NSW
Defence - BEECROFT RAPIER RANGE [10052]	NSW
Defence - BEECROFT RAPIER RANGE [10050]	NSW
Defence - BEECROFT RAPIER RANGE [10051]	NSW
Defence - DEE WHY DEPOT [11095]	NSW
Defence - DEFENCE PLAZA SYDNEY [11179]	NSW
Defence - DEGAUSSING RANGE [10039]	NSW
Defence - ENDEAVOUR HOUSE - COOGEE [11172]	NSW
Defence - FLEET BASE WHARVES [10024]	NSW
Defence - FLEET BASE WHARVES [10023]	NSW
Defence - FLEET BASE WHARVES [10022]	NSW
Defence - FLEET BASE WHARVES [10021]	NSW
Defence - GARDEN ISLAND [10014]	NSW
Defence - Graovac House [10147]	NSW
Defence - HMAS KUTTABUL (AC 30/5 Lot4 DP218946) [11074]	NSW
Defence - HMAS PENGUIN [11071]	NSW
Defence - HMAS PLATYPUS - SPDU FOR DISPOSAL [10042]	NSW
Defence - HMAS PLATYPUS - SPDU FOR DISPOSAL [10040]	NSW
Defence - HMAS PLATYPUS - SPDU FOR DISPOSAL [10041]	NSW
Defence - HMAS WATSON [10029]	NSW
Defence - HYDROGRAPHIC OFFICE [10234]	NSW
Defence - JENNER BUILDING [10034]	NSW
Defence - KENSINGTON DEPOT [11110]	NSW

Commonwealth Land Name	State
Defence - KISMET/HMAS KUTTABUL-POTTS PT [11173]	NSW
Defence - LADY GOWRIE HOUSE [10046]	NSW
Defence - LADY GOWRIE HOUSE [10047]	NSW
Defence - LADY GOWRIE HOUSE [10045]	NSW
Defence - LAKE ILLAWARRA CADET FACILITY [10241]	NSW
Defence - MARITIME COMD CTRE-POTTS POINT ; BOMERAH/TARANA [10032]	NSW
Defence - MARITIME COMD CTRE-POTTS POINT ; BOMERAH/TARANA [10033]	NSW
Defence - MARITIME HEADQUARTERS [11178]	NSW
Defence - MILLER'S POINT TRAINING DEPOT [11118]	NSW
Defence - NFI CHOWDER BAY (fuel depot) [10043]	NSW
Defence - NORTH SYDNEY - HYDRO OFFICE [11161]	NSW
Defence - OFFICES [11195]	NSW
Defence - OXFORD ST SYDNEY [11168]	NSW
Defence - OXFORD ST SYDNEY [11169]	NSW
Defence - OXFORD ST SYDNEY [11166]	NSW
Defence - OXFORD ST SYDNEY [11165]	NSW
Defence - OXFORD ST SYDNEY [11167]	NSW
Defence - OXFORD ST SYDNEY [11164]	NSW
Defence - PARKVIEW BUILDING - SYDNEY [11170]	NSW
Defence - PITTWATER DIVING ANNEX (forms part of "RAN Torpedo Range") [10027]	NSW
Defence - PITTWATER DIVING ANNEX (forms part of "RAN Torpedo Range") [10026]	NSW
Defence - PITTWATER DIVING ANNEX (forms part of "RAN Torpedo Range") [10028]	NSW
Defence - RAAF BASE WILLIAMTOWN [10006]	NSW
Defence - RANDWICK (CARRINGTON RD) [11132]	NSW
Defence - RANDWICK (CARRINGTON RD) [11133]	NSW

Commonwealth Land Name	State
Defence - RANDWICK (CARRINGTON RD) [11134]	NSW
Defence - RANDWICK (CARRINGTON RD) [11135]	NSW
Defence - RANDWICK BARRACKS [11128]	NSW
Defence - RANDWICK BARRACKS [11129]	NSW
Defence - RANDWICK BARRACKS [11126]	NSW
Defence - RANDWICK BARRACKS [11127]	NSW
Defence - RANDWICK BARRACKS [11125]	NSW
Defence - RANDWICK BARRACKS [11124]	NSW
Defence - RANDWICK BARRACKS [11130]	NSW
Defence - RANDWICK BARRACKS [11131]	NSW
Defence - RANDWICK FRENCHMANS TRG [11163]	NSW
Defence - RANDWICK FRENCHMANS TRG [11162]	NSW
Defence - ROCKDALE TRAINING DEPOT [11111]	NSW
Defence - STOCKTON RIFLE RANGE [10057]	NSW
Defence - SUSSEX INLET - DEFENCE RESERVE [11233]	NSW
Defence - THROSBY TRG DEPOT-PORT KEMBLA [10056]	NSW
Defence - Training Depot [10074]	NSW
Defence - Training Depot [10075]	NSW
Defence - TRAINING SHIP CONDAMINE [11073]	NSW
Defence - TRAINING SHIP CONDAMINE [11072]	NSW
Defence - TRESCO [10044]	NSW
Defence - TS ALBATROSS-WOLLONGONG [10148]	NSW
Defence - TS TOBRUK [10053]	NSW
Defence - VAUCLUSE TRAINING DEPOT [11137]	NSW
Defence - VICTORIA BARRACKS - PADDINGTON [11121]	NSW
Defence - VICTORIA BARRACKS - PADDINGTON [11120]	NSW
Defence - VICTORIA BARRACKS - PADDINGTON [11119]	NSW

Commonwealth Land Name	State
Defence - WILLOUGHBY TRG DEP [11159]	NSW
Defence - WILLOUGHBY TRG DEP [11144]	NSW
Defence - WILLOUGHBY TRG DEP [11145]	NSW
Defence - WILLOUGHBY TRG DEP [11146]	NSW
Defence - WILLOUGHBY TRG DEP [11147]	NSW
Defence - WILLOUGHBY TRG DEP [11140]	NSW
Defence - WILLOUGHBY TRG DEP [11149]	NSW
Defence - WILLOUGHBY TRG DEP [11148]	NSW
Defence - WILLOUGHBY TRG DEP [11143]	NSW
Defence - WILLOUGHBY TRG DEP [11142]	NSW
Defence - WILLOUGHBY TRG DEP [11141]	NSW
Defence - WILLOUGHBY TRG DEP [11139]	NSW
Defence - WILLOUGHBY TRG DEP [11138]	NSW
Defence - WILLOUGHBY TRG DEP [11157]	NSW
Defence - WILLOUGHBY TRG DEP [11155]	NSW
Defence - WILLOUGHBY TRG DEP [11156]	NSW
Defence - WILLOUGHBY TRG DEP [11152]	NSW
Defence - WILLOUGHBY TRG DEP [11151]	NSW
Defence - WILLOUGHBY TRG DEP [11154]	NSW
Defence - WILLOUGHBY TRG DEP [11153]	NSW
Defence - WILLOUGHBY TRG DEP [11150]	NSW
Defence - WILLOUGHBY TRG DEP [11158]	NSW
Defence - WOLLONGONG MULTI-USER DEPOT [11209]	NSW
Defence - WOOLLOOMOOLOO CARPARK [11177]	NSW
Defence - WOOLLOOMOOLOO CARPARK [11174]	NSW
Defence - WOOLLOOMOOLOO CARPARK [11175]	NSW
Defence - WOOLLOOMOOLOO CARPARK [11176]	NSW

Commonwealth Land Name	State
Defence - ZETLAND NAVY SUPPLY CENTRE [11078]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11077]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11075]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11079]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11076]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11091]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11090]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11092]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11089]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11088]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11081]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11083]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11080]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11085]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11082]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11087]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11084]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11086]	NSW
Defence - Defence Housing Authority	
Commonwealth Land - Defence Housing Authority [16120]	NSW
Commonwealth Land - Defence Housing Authority [14316]	NSW
Commonwealth Land - Defence Housing Authority [14315]	NSW
Commonwealth Land - Defence Housing Authority [15751]	NSW
Commonwealth Land - Defence Housing Authority [15753]	NSW
Commonwealth Land - Defence Housing Authority [15754]	NSW
Commonwealth Land - Defence Housing Authority [15757]	NSW
Commonwealth Land - Defence Housing Authority [15756]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Housing Authority [15918]	NSW
Commonwealth Land - Defence Housing Authority [15718]	NSW
Commonwealth Land - Defence Housing Authority [14450]	NSW
Commonwealth Land - Defence Housing Authority [15441]	NSW
Commonwealth Land - Defence Housing Authority [14344]	NSW
Commonwealth Land - Defence Housing Authority [14347]	NSW
Commonwealth Land - Defence Housing Authority [14345]	NSW
Commonwealth Land - Defence Housing Authority [16459]	NSW
Commonwealth Land - Defence Housing Authority [14346]	NSW
Commonwealth Land - Defence Housing Authority [13179]	NSW
Commonwealth Land - Defence Housing Authority [13178]	NSW
Commonwealth Land - Defence Housing Authority [13172]	NSW
Commonwealth Land - Defence Housing Authority [13171]	NSW
Commonwealth Land - Defence Housing Authority [13170]	NSW
Commonwealth Land - Defence Housing Authority [13177]	NSW
Commonwealth Land - Defence Housing Authority [13174]	NSW
Commonwealth Land - Defence Housing Authority [13176]	NSW
Commonwealth Land - Defence Housing Authority [13175]	NSW
Commonwealth Land - Defence Housing Authority [12210]	NSW
Commonwealth Land - Defence Housing Authority [12213]	NSW
Commonwealth Land - Defence Housing Authority [16167]	NSW
Commonwealth Land - Defence Housing Authority [16165]	NSW
Commonwealth Land - Defence Housing Authority [16166]	NSW
Commonwealth Land - Defence Housing Authority [11678]	NSW
Commonwealth Land - Defence Housing Authority [13232]	NSW
Commonwealth Land - Defence Housing Authority [14314]	NSW
Commonwealth Land - Defence Housing Authority [14312]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Housing Authority [14313]	NSW
Commonwealth Land - Defence Housing Authority [14318]	NSW
Commonwealth Land - Defence Housing Authority [14319]	NSW
Commonwealth Land - Defence Housing Authority [14317]	NSW
Commonwealth Land - Defence Housing Authority [13238]	NSW
Commonwealth Land - Defence Housing Authority [13124]	NSW
Commonwealth Land - Defence Housing Authority [14311]	NSW
Commonwealth Land - Defence Housing Authority [16170]	NSW
Commonwealth Land - Defence Housing Authority [16171]	NSW
Commonwealth Land - Defence Housing Authority [12062]	NSW
Commonwealth Land - Defence Housing Authority [12063]	NSW
Commonwealth Land - Defence Housing Authority [12060]	NSW
Commonwealth Land - Defence Housing Authority [12084]	NSW
Commonwealth Land - Defence Housing Authority [12085]	NSW
Commonwealth Land - Defence Housing Authority [15570]	NSW
Commonwealth Land - Defence Housing Authority [16173]	NSW
Commonwealth Land - Defence Housing Authority [16172]	NSW
Commonwealth Land - Defence Housing Authority [15969]	NSW
Commonwealth Land - Defence Housing Authority [11688]	NSW
Commonwealth Land - Defence Housing Authority [14362]	NSW
Commonwealth Land - Defence Housing Authority [14380]	NSW
Commonwealth Land - Defence Housing Authority [15750]	NSW
Commonwealth Land - Defence Housing Authority [15752]	NSW
Commonwealth Land - Defence Housing Authority [16495]	NSW
Commonwealth Land - Defence Housing Authority [11767]	NSW
Commonwealth Land - Defence Housing Authority [15413]	NSW
Commonwealth Land - Defence Housing Authority [16477]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Housing Authority [16462]	NSW
Commonwealth Land - Defence Housing Authority [16464]	NSW
Commonwealth Land - Defence Housing Authority [16460]	NSW
Commonwealth Land - Defence Housing Authority [16468]	NSW
Commonwealth Land - Defence Housing Authority [11484]	NSW
Commonwealth Land - Defence Housing Authority [16119]	NSW
Commonwealth Land - Defence Housing Authority [11390]	NSW
Commonwealth Land - Defence Housing Authority [16028]	NSW
Commonwealth Land - Defence Housing Authority [14330]	NSW
Commonwealth Land - Defence Housing Authority [13286]	NSW
Commonwealth Land - Defence Housing Authority [14539]	NSW
Commonwealth Land - Defence Housing Authority [11393]	NSW
Commonwealth Land - Defence Housing Authority [11391]	NSW
Commonwealth Land - Defence Housing Authority [16169]	NSW
Commonwealth Land - Defence Housing Authority [16168]	NSW
Commonwealth Land - Defence Housing Authority [16463]	NSW
Commonwealth Land - Defence Housing Authority [16461]	NSW
Commonwealth Land - Defence Housing Authority [16467]	NSW
Commonwealth Land - Defence Housing Authority [16465]	NSW
Commonwealth Land - Defence Housing Authority [16469]	NSW
Commonwealth Land - Defence Housing Authority [14300]	NSW
Commonwealth Land - Defence Housing Authority [14308]	NSW
Commonwealth Land - Defence Housing Authority [14309]	NSW
Commonwealth Land - Defence Housing Authority [14306]	NSW
Commonwealth Land - Defence Housing Authority [14307]	NSW
Commonwealth Land - Defence Housing Authority [14305]	NSW
Commonwealth Land - Defence Housing Authority [14302]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Housing Authority [14303]	NSW
Commonwealth Land - Defence Housing Authority [16466]	NSW
Commonwealth Land - Defence Housing Authority [13135]	NSW
Commonwealth Land - Defence Housing Authority [13212]	NSW
Commonwealth Land - Defence Housing Authority [12077]	NSW
Commonwealth Land - Defence Housing Authority [16286]	NSW
Commonwealth Land - Defence Housing Authority [12087]	NSW
Commonwealth Land - Defence Housing Authority [12086]	NSW
Commonwealth Land - Defence Housing Authority [12211]	NSW
Commonwealth Land - Defence Housing Authority [14289]	NSW
Commonwealth Land - Defence Housing Authority [14288]	NSW
Commonwealth Land - Defence Housing Authority [16470]	NSW
Commonwealth Land - Defence Housing Authority [15881]	NSW
Commonwealth Land - Defence Housing Authority [15885]	NSW
Commonwealth Land - Defence Housing Authority [15886]	NSW
Commonwealth Land - Defence Housing Authority [15884]	NSW
Commonwealth Land - Defence Housing Authority [15608]	NSW
Commonwealth Land - Defence Housing Authority [12209]	NSW
Commonwealth Land - Defence Housing Authority [16062]	NSW
Commonwealth Land - Defence Housing Authority [16121]	NSW
Commonwealth Land - Defence Housing Authority [13289]	NSW
Commonwealth Land - Defence Housing Authority [13288]	NSW
Commonwealth Land - Defence Housing Authority [13196]	NSW
Commonwealth Land - Defence Housing Authority [13191]	NSW
Commonwealth Land - Defence Housing Authority [13190]	NSW
Commonwealth Land - Defence Housing Authority [15920]	NSW
Commonwealth Land - Defence Housing Authority [12208]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Housing Authority [14321]	NSW
Commonwealth Land - Defence Housing Authority [14320]	NSW
Commonwealth Land - Defence Housing Authority [13182]	NSW
Commonwealth Land - Defence Housing Authority [13185]	NSW
Commonwealth Land - Defence Housing Authority [13184]	NSW
Commonwealth Land - Defence Housing Authority [13188]	NSW
Commonwealth Land - Defence Housing Authority [13181]	NSW
Commonwealth Land - Defence Housing Authority [13180]	NSW
Commonwealth Land - Defence Housing Authority [13183]	NSW
Commonwealth Land - Defence Housing Authority [13189]	NSW
Commonwealth Land - Defence Housing Authority [12212]	NSW
Commonwealth Land - Defence Housing Authority [12216]	NSW
Commonwealth Land - Defence Housing Authority [12214]	NSW
Commonwealth Land - Defence Housing Authority [12067]	NSW
Commonwealth Land - Defence Housing Authority [15948]	NSW
Commonwealth Land - Defence Housing Authority [15596]	NSW
Commonwealth Land - Defence Housing Authority [14304]	NSW
Commonwealth Land - Defence Housing Authority [14294]	NSW
Commonwealth Land - Defence Housing Authority [14299]	NSW
Commonwealth Land - Defence Housing Authority [14296]	NSW
Commonwealth Land - Defence Housing Authority [14295]	NSW
Commonwealth Land - Defence Housing Authority [14290]	NSW
Commonwealth Land - Defence Housing Authority [14297]	NSW
Commonwealth Land - Defence Housing Authority [14292]	NSW
Commonwealth Land - Defence Housing Authority [14291]	NSW
Commonwealth Land - Defence Housing Authority [12088]	NSW
Commonwealth Land - Defence Housing Authority [14293]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Housing Authority [14298]	NSW
Commonwealth Land - Defence Housing Authority [15414]	NSW
Commonwealth Land - Defence Housing Authority [16122]	NSW
Commonwealth Land - Defence Housing Authority [12061]	NSW
Commonwealth Land - Defence Housing Authority [15963]	NSW
Commonwealth Land - Defence Housing Authority [16189]	NSW
Commonwealth Land - Defence Housing Authority [16454]	NSW
Commonwealth Land - Defence Housing Authority [16456]	NSW
Commonwealth Land - Defence Housing Authority [16455]	NSW
Commonwealth Land - Defence Housing Authority [13186]	NSW
Commonwealth Land - Defence Housing Authority [15755]	NSW
Commonwealth Land - Defence Housing Authority [15959]	NSW
Commonwealth Land - Defence Housing Authority [15749]	NSW
Commonwealth Land - Defence Housing Authority [13168]	NSW
Commonwealth Land - Defence Housing Authority [13169]	NSW
Commonwealth Land - Defence Housing Authority [13166]	NSW
Commonwealth Land - Defence Housing Authority [13167]	NSW
Commonwealth Land - Defence Housing Authority [16457]	NSW
Commonwealth Land - Defence Housing Authority [16458]	NSW
Commonwealth Land - Defence Housing Authority [16453]	NSW
Commonwealth Land - Director of War Service Homes [11676]	NSW
Commonwealth Land - Director of War Service Homes [11677]	NSW
Commonwealth Land - Director of War Service Homes [13230]	NSW
Commonwealth Land - Director of War Service Homes [12068]	NSW
Commonwealth Land - Director of War Service Homes [14367]	NSW
Commonwealth Land - Director of War Service Homes [11683]	NSW
Commonwealth Land - Director of War Service Homes [14361]	NSW

Commonwealth Land Name	State
Commonwealth Land - Director of War Service Homes [14358]	NSW
Commonwealth Land - Director of War Service Homes [11652]	NSW
Commonwealth Land - Director of War Service Homes [11770]	NSW
Commonwealth Land - Director of War Service Homes [11704]	NSW
Commonwealth Land - Director of War Service Homes [12206]	NSW
Commonwealth Land - Director of War Service Homes [12032]	NSW
Commonwealth Land - Director of War Service Homes [11712]	NSW
Commonwealth Land - Director of War Service Homes [11725]	NSW
Defence - Royal Australian Navy Central Canteens Board	
Commonwealth Land - Royal Australian Navy Central Canteens Board [11341]	NSW
Commonwealth Land - Royal Australian Navy Central Canteens Board [12018]	NSW
Commonwealth Land - Royal Australian Navy Central Canteens Board [11342]	NSW
Commonwealth Land - Royal Australian Navy Central Canteens Board [11343]	NSW
Environment and Heritage	
Commonwealth Land - Booderee National Park [91005]	JBT
Commonwealth Land - Booderee National Park [91002]	JBT
Commonwealth Land - Booderee National Park [91004]	JBT
Commonwealth Land - Booderee National Park [91003]	JBT
Commonwealth Land - Booderee National Park [91001]	JBT
Transport and Regional Services - Airservices Australia	
Commonwealth Land - Airservices Australia [12057]	NSW
Treasury - Reserve Bank of Australia	
Commonwealth Land - Reserve Bank of Australia [13138]	NSW
Commonwealth Land - Reserve Bank of Australia [13150]	NSW
Commonwealth Land - Reserve Bank of Australia [13151]	NSW
Commonwealth Land - Reserve Bank of Australia [13159]	NSW
Commonwealth Land - Reserve Bank of Australia [16499]	NSW

Commonwealth Land Name	State
Commonwealth Land - Reserve Bank of Australia [13149]	NSW
Commonwealth Land - Reserve Bank of Australia [13148]	NSW
Commonwealth Land - Reserve Bank of Australia [13160]	NSW
Unknown	
Commonwealth Land - [11510]	NSW
Commonwealth Land - [11518]	NSW
Commonwealth Land - [11516]	NSW
Commonwealth Land - [15690]	NSW
Commonwealth Land - [14373]	NSW
Commonwealth Land - [14372]	NSW
Commonwealth Land - [14371]	NSW
Commonwealth Land - [14370]	NSW
Commonwealth Land - [14378]	NSW
Commonwealth Land - [16159]	NSW
Commonwealth Land - [14374]	NSW
Commonwealth Land - [14376]	NSW
Commonwealth Land - [14375]	NSW
Commonwealth Land - [13218]	NSW
Commonwealth Land - [13219]	NSW
Commonwealth Land - [16434]	NSW
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Commonwealth Land - [15436]	NSW
Commonwealth Land - [15434]	NSW
Commonwealth Land - [15707]	NSW
Commonwealth Land - [15706]	NSW
Commonwealth Land - [15503]	NSW
Commonwealth Land - [11376]	NSW

Commonwealth Land Name	State
Commonwealth Land - [11599]	NSW
Commonwealth Land - [11504]	NSW
Commonwealth Land - [11517]	NSW
Commonwealth Land - [11519]	NSW
Commonwealth Land - [11507]	NSW
Commonwealth Land - [11506]	NSW
Commonwealth Land - [11501]	NSW
Commonwealth Land - [11500]	NSW
Commonwealth Land - [11503]	NSW
Commonwealth Land - [11505]	NSW
Commonwealth Land - [11509]	NSW
Commonwealth Land - [11499]	NSW
Commonwealth Land - [16161]	NSW
Commonwealth Land - [14310]	NSW
Commonwealth Land - [12992]	NSW
Commonwealth Land - [15961]	NSW
Commonwealth Land - [15960]	NSW
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Commonwealth Land - [11684]	NSW
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Commonwealth Land - [14396]	NSW
Commonwealth Land - [14394]	NSW
Commonwealth Land - [14397]	NSW
Commonwealth Land - [14392]	NSW
Commonwealth Land - [14395]	NSW
Commonwealth Land - [14393]	NSW
Commonwealth Land - [14398]	NSW

Commonwealth Land Name	State
Commonwealth Land - [14399]	NSW
Commonwealth Land - [14364]	NSW
Commonwealth Land - [12232]	NSW
Commonwealth Land - [12231]	NSW
Commonwealth Land - [14401]	NSW
Commonwealth Land - [11160]	NSW
Commonwealth Land - [16071]	NSW
Commonwealth Land - [11388]	NSW
Commonwealth Land - [11383]	NSW
Commonwealth Land - [13217]	NSW
Commonwealth Land - [12042]	NSW
Commonwealth Land - [14382]	NSW
Commonwealth Land - [13143]	NSW
Commonwealth Land - [15688]	NSW
Commonwealth Land - [15689]	NSW
Commonwealth Land - [11485]	NSW
Commonwealth Land - [11483]	NSW
Commonwealth Land - [11482]	NSW
Commonwealth Land - [12041]	NSW
Commonwealth Land - [16116]	NSW
Commonwealth Land - [14334]	NSW
Commonwealth Land - [16160]	NSW
Commonwealth Land - [14354]	NSW
Commonwealth Land - [15623]	NSW
Commonwealth Land - [15627]	NSW
Commonwealth Land - [15624]	NSW
Commonwealth Land - [15621]	NSW

Commonwealth Land Name	State
Commonwealth Land - [15626]	NSW
Commonwealth Land - [15628]	NSW
Commonwealth Land - [13146]	NSW
Commonwealth Land - [14301]	NSW
Commonwealth Land - [15941]	NSW
Commonwealth Land - [16562]	NSW
Commonwealth Land - [15406]	NSW
Commonwealth Land - [13229]	NSW
Commonwealth Land - [13139]	NSW
Commonwealth Land - [15625]	NSW
Commonwealth Land - [13227]	NSW
Commonwealth Land - [15729]	NSW
Commonwealth Land - [11521]	NSW
Commonwealth Land - [16283]	NSW
Commonwealth Land - [15082]	NSW
Commonwealth Land - [11520]	NSW
Commonwealth Land - [11523]	NSW
Commonwealth Land - [11522]	NSW
Commonwealth Land - [16279]	NSW
Commonwealth Land - [11709]	NSW
Commonwealth Land - [11706]	NSW
Commonwealth Land - [11707]	NSW
Commonwealth Land - [13142]	NSW
Commonwealth Land - [13147]	NSW
Commonwealth Land - [13144]	NSW
Commonwealth Land - [15883]	NSW
Commonwealth Land - [15882]	NSW

Commonwealth Land Name	State
Commonwealth Land - [13145]	NSW
Commonwealth Land - [13287]	NSW
Commonwealth Land - [15459]	NSW
Commonwealth Land - [15708]	NSW
Commonwealth Land - [13285]	NSW
Commonwealth Land - [15622]	NSW
Commonwealth Land - [13161]	NSW
Commonwealth Land - [14400]	NSW
Commonwealth Land - [15410]	NSW
Commonwealth Land - [11508]	NSW
Commonwealth Land - [14336]	NSW
Commonwealth Land - [14335]	NSW
Commonwealth Land - [14353]	NSW
Commonwealth Land - [13173]	NSW
Commonwealth Land - [13163]	NSW
Commonwealth Land - [13165]	NSW
Commonwealth Land - [16452]	NSW

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Historic		
Admiralty House and Lodge	NSW	Listed place
Admiralty House Garden and Fortifications	NSW	Listed place
Army Cottage with return verandah	NSW	Listed place
Barracks Group HMAS Watson	NSW	Listed place
Batteries A83 and C9A	NSW	Listed place
Battery B42	NSW	Listed place
Battery for Five Guns	NSW	Listed place
Bondi Beach Post Office	NSW	Listed place

Name	State	Status
Botany Post Office	NSW	Listed place
Buildings 31 and 32	NSW	Listed place
Buildings MQVB16 and VB56	NSW	Listed place
Buildings VB13, 15, 16 & 17	NSW	Listed place
Buildings VB41, 45 & 53	NSW	Listed place
Buildings VB60 and VB62	NSW	Listed place
Buildings VB69, 75 & 76 including Garden	NSW	Listed place
Buildings VB83, 84, 85, 87 & 89	NSW	Listed place
Buildings VB90, 91, 91A & 92	NSW	Listed place
Building VB1 and Parade Ground	NSW	Listed place
Building VB2 Guard House	NSW	Listed place
Cape Baily Lighthouse	NSW	Listed place
Cape St George Lighthouse Ruins & Curtilage	ACT	Listed place
Chain and Anchor Store (former)	NSW	Listed place
Chowder Bay Barracks Group	NSW	Listed place
Christians Minde Settlement	ACT	Listed place
Cliff House	NSW	Listed place
Commonwealth Avenue Defence Housing	NSW	Listed place
Cottage at Macquarie Lighthouse	NSW	Listed place
Cronulla Post Office	NSW	Listed place
Customs Marine Centre	NSW	Listed place
Defence site - Georges Heights and Middle Head	NSW	Listed place
Factory	NSW	Listed place
Fort Wallace	NSW	Listed place
Garden Island Precinct	NSW	Listed place
Gazebo	NSW	Listed place

Name	State	Status
General Post Office	NSW	Listed place
Golf Clubhouse (former)	NSW	Listed place
Headquarters 8th Brigade Precinct	NSW	Listed place
Headquarters Training Command Precinct	NSW	Listed place
HMAS Penguin	NSW	Listed place
Jervis Bay Botanic Gardens	ACT	Listed place
Kiama Post Office	NSW	Listed place
Kirribilli House	NSW	Listed place
Kirribilli House Garden & Grounds	NSW	Listed place
Macquarie Lighthouse	NSW	Listed place
Macquarie Lighthouse Group	NSW	Listed place
Macquarie Lighthouse Surrounding Wall	NSW	Listed place
Marine Biological Station (former)	NSW	Listed place
Military Road Framework - Defence Land	NSW	Listed place
Naval Store	NSW	Listed place
Navy Refuelling Depot and Caretakers House	NSW	Listed place
Nobbys Lighthouse	NSW	Listed place
North Head Artillery Barracks	NSW	Listed place
North Sydney Post Office	NSW	Listed place
Office Building	NSW	Listed place
Officers Mess, HQ Training Command	NSW	Listed place
Paddington Post Office	NSW	Listed place
Point Perpendicular Lightstation	NSW	Listed place
Reserve Bank	NSW	Listed place
Residences Group	NSW	Listed place
Rigging Shed and Chapel	NSW	Listed place
Royal Australian Naval College	ACT	Listed place

Name	State	Status
School of Musketry and Officers Mess, Randwick Army Barracks	NSW	Listed place
Shark Point Battery	NSW	Listed place
Smoky Cape Lighthouse	NSW	Listed place
Sugarloaf Point Lighthouse	NSW	Listed place
Sydney Airport Air Traffic Control Tower	NSW	Listed place
Sydney Customs House (former)	NSW	Listed place
Ten Terminal Regiment Headquarters and AusAid Training Centre	NSW	Listed place
Thirty Terminal Squadron Precinct	NSW	Listed place
Victoria Barracks Perimeter Wall and Gates	NSW	Listed place
Victoria Barracks Precinct	NSW	Listed place
Victoria Barracks Squash Courts	NSW	Listed place
Williamtown RAAF Base Group	NSW	Listed place
Indigenous		
Crocodile Head Area	NSW	Within listed place
Currarong Rockshelters Area	NSW	Within listed place
Jervis Bay Territory	ACT	Listed place
Natural		
Beecroft Peninsula	NSW	Listed place

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous albivitta as Procelsterna cerulea Grey Noddy, Grey Ternlet [91286]		Breeding known to occur within area
Anous stolidus Common Noddy [825]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Breeding known to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known 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]		Breeding likely to occur within area overfly marine 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 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

Scientific Name	Threatened Category	Presence Text
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 subminuta Long-toed Stint [861]		Roosting known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within 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
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat likely to occur within area
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat 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 dominicanus Kelp Gull [809]		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
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine 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
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 known to occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding known to occur within area overfly marine area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may 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]		Breeding likely to occur within area
Pterodroma nigripennis Black-winged Petrel [1038]		Breeding known to occur within area
Pterodroma solandri Providence Petrel [1040]		Breeding known to occur within area
Puffinus assimilis Little Shearwater [59363]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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 known to occur within area overfly marine 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
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sula dactylatra Masked Booby [1021]		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	Species or species habitat likely to occur within area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to 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	Species or species habitat may 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

Scientific Name	Threatened Category	Presence Text
[Tringa glareola](#) Wood Sandpiper [829]		Foraging, feeding or related behaviour known to occur within area overfly marine area
[Tringa incana as Heteroscelus incanus](#) Wandering Tattler [831]		Roosting known to occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
[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		
[Acentronura tentaculata](#) Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
[Campichthys tryoni](#) Tryon's Pipefish [66193]		Species or species habitat may occur within area
[Corythoichthys amplexus](#) Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
[Corythoichthys ocellatus](#) Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area
[Cosmocampus howensis](#) Lord Howe Pipefish [66208]		Species or species habitat may occur within area
[Festucalex cinctus](#) Girdled Pipefish [66214]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus boothae Booth's Pipefish [66218]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus 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 kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat known to occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		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
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		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
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
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]		Species or species habitat may occur within area
Dugong dugon Dugong [28]		Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding 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
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	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 likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
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

Current Scientific Name	Status	Type of Presence
[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
[Feresa attenuata](#) Pygmy Killer Whale [61]		Species or species habitat may occur within area
[Globicephala macrorhynchus](#) Short-finned Pilot Whale [62]		Species or species habitat may occur within area
[Globicephala melas](#) Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
[Grampus griseus](#) Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
[Hyperoodon planifrons](#) Southern Bottlenose Whale [71]		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
[Lissodelphis peronii](#) Southern Right Whale Dolphin [44]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
[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 ginkgodens](#) Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
[Mesoplodon grayi](#) Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
[Mesoplodon 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
[Peponocephala electra](#) Melon-headed Whale [47]		Species or species habitat may occur within area
[Physeter macrocephalus](#) Sperm Whale [59]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops 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

Commonwealth Reserves Terrestrial [Resource Information]

Name	State	Type
Booderee	JBT	National Park (Commonwealth)
Booderee	JBT	Botanic Gardens (Commonwealth)

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories

Park Name	Zone & IUCN Categories
Central Eastern	Habitat Protection Zone (IUCN IV)
Central Eastern	Habitat Protection Zone (IUCN IV)
Hunter	Habitat Protection Zone (IUCN IV)
Jervis	Habitat Protection Zone (IUCN IV)
Lord Howe	Habitat Protection Zone (IUCN IV)
Lord Howe	Habitat Protection Zone (Lord Howe) (IUCN IV)
Central Eastern	Multiple Use Zone (IUCN VI)
Lord Howe	Multiple Use Zone (IUCN VI)
Central Eastern	National Park Zone (IUCN II)
Cod Grounds	National Park Zone (IUCN II)
Lord Howe	National Park Zone (IUCN II)
Hunter	Special Purpose Zone (Trawl) (IUCN VI)
Jervis	Special Purpose Zone (Trawl) (IUCN VI)
Solitary Islands	Special Purpose Zone (Trawl) (IUCN VI)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Arakoon	National Park	NSW
Awabakal	Nature Reserve	NSW
Barren Grounds	Nature Reserve	NSW
Barrenjoey	Aquatic Reserve	NSW
Batemans	Marine Park	NSW
Belowla Island	Nature Reserve	NSW

Protected Area Name	Reserve Type	State
Berkeley	Nature Reserve	NSW
Berowra Valley	National Park	NSW
Bird Island	Nature Reserve	NSW
Boat Harbour	Aquatic Reserve	NSW
Bongil Bongil	National Park	NSW
Boondelbah	Nature Reserve	NSW
Booti Booti	National Park	NSW
Bouddi	National Park	NSW
Brisbane Water	National Park	NSW
Bronte-Coogee	Aquatic Reserve	NSW
Brush Island	Nature Reserve	NSW
Bruxner Park	Flora Reserve	NSW
Bull Island	Nature Reserve	NSW
Bushrangers Bay	Aquatic Reserve	NSW
Bushy Island	Nature Reserve	NSW
Cabbage Tree Bay	Aquatic Reserve	NSW
Cape Banks	Aquatic Reserve	NSW
Clybucca	Aboriginal Area	NSW
Clybucca	Historic Site	NSW
Clyde River	National Park	NSW
Cockle Bay	Nature Reserve	NSW
Coffs Coast	Regional Park	NSW
Colongra Swamp	Nature Reserve	NSW
Comerong Island	Nature Reserve	NSW
Conjola	National Park	NSW
Corrie Island	Nature Reserve	NSW
Crowdy Bay	National Park	NSW

Protected Area Name	Reserve Type	State
Cullendulla Creek	Nature Reserve	NSW
Cullunghutti	Aboriginal Area	NSW
Darawank	Nature Reserve	NSW
Dharawal	National Park	NSW
Dharawal	Nature Reserve	NSW
Dharug	National Park	NSW
Fishermans Bend	Nature Reserve	NSW
Five Islands	Nature Reserve	NSW
Flat Island	Nature Reserve	NSW
Gaagal Wanggaan (South Beach)	National Park	NSW
Garawarra	State Conservation Area	NSW
Garigal	National Park	NSW
Gir-um-bit	State Conservation Area	NSW
Gir-um-bit	National Park	NSW
Glenrock	State Conservation Area	NSW
Goolawah	National Park	NSW
Goolawah	Regional Park	NSW
Hat Head	National Park	NSW
Heathcote	National Park	NSW
Hunter Wetlands	National Park	NSW
Illawarra Escarpment	State Conservation Area	NSW
Innes Ruins	Historic Site	NSW
Jagun	Nature Reserve	NSW
Jervis Bay	National Park	NSW
Jervis Bay	Marine Park	NSW

Protected Area Name	Reserve Type	State
John Gould	Nature Reserve	NSW
Kamay Botany Bay	National Park	NSW
Karuah	National Park	NSW
Karuah	Nature Reserve	NSW
Kattang	Nature Reserve	NSW
Khappinghat	National Park	NSW
Khappinghat	Nature Reserve	NSW
Killalea	Regional Park	NSW
Kororo	Nature Reserve	NSW
Ku-ring-gai Chase	National Park	NSW
Lake Innes	State Conservation Area	NSW
Lake Innes	Nature Reserve	NSW
Lake Macquarie	State Conservation Area	NSW
Limeburners Creek	National Park	NSW
Lion Island	Nature Reserve	NSW
Little Broughton Island	Nature Reserve	NSW
Long Island	Nature Reserve	NSW
Long Reef	Aquatic Reserve	NSW
Lord Howe Island	Permanent Park Preserve	NSW
Lord Howe Island	Marine Park	NSW
Macquarie	Nature Reserve	NSW
Malabar Headland	National Park	NSW
Marramarra	National Park	NSW
Medowie	Nature Reserve	NSW
Medowie	State Conservation Area	NSW

Protected Area Name	Reserve Type	State
Meroo	National Park	NSW
Middle Brother	National Park	NSW
Minimbah	Nature Reserve	NSW
Moonee Beach	Nature Reserve	NSW
Moon Island	Nature Reserve	NSW
Munmorah	State Conservation Area	NSW
Muogamarra	Nature Reserve	NSW
Murramarang	Aboriginal Area	NSW
Murramarang	National Park	NSW
Muttonbird Island	Nature Reserve	NSW
Myall Lakes	National Park	NSW
Nameless Sylvan	Conservation Reserve	NSW
Narrabeen	Aquatic Reserve	NSW
Narrawallee Creek	Nature Reserve	NSW
North Sydney Harbour	Aquatic Reserve	NSW
Nunguu Mirral	Aboriginal Area	NSW
One Tree Island	Nature Reserve	NSW
Popran	National Park	NSW
Port Stephens - Great Lakes	Marine Park	NSW
Queens Lake	State Conservation Area	NSW
Queens Lake	Nature Reserve	NSW
Royal	National Park	NSW
Saltwater	National Park	NSW
Sea Acres	National Park	NSW
Seal Rocks	Nature Reserve	NSW
Seven Mile Beach	National Park	NSW

Protected Area Name	Reserve Type	State
Shark Island	Nature Reserve	NSW
Sherwood	Nature Reserve	NSW
Shiprock	Aquatic Reserve	NSW
Snapper Island	Nature Reserve	NSW
Solitary Islands	Marine Park	NSW
South Solitary Island	Historic Site	NSW
South West Solitary Island	Nature Reserve	NSW
Spectacle Island	Nature Reserve	NSW
Split Solitary Island	Nature Reserve	NSW
Stormpetrel	Nature Reserve	NSW
Sydney Harbour	National Park	NSW
Tilligerry	Nature Reserve	NSW
Tilligerry	State Conservation Area	NSW
Tilligerry	National Park	NSW
Tollgate Islands	Nature Reserve	NSW
Tomaree	National Park	NSW
Towibakh	Nature Reserve	NSW
Towra Point	Nature Reserve	NSW
Towra Point	Aquatic Reserve	NSW
Tuggerah	Nature Reserve	NSW
Tuggerah	State Conservation Area	NSW
Valla	Nature Reserve	NSW
Wallarah	National Park	NSW
Wallingat	National Park	NSW
Wallis Island	Nature Reserve	NSW
Wamberal Lagoon	Nature Reserve	NSW

Protected Area Name	Reserve Type	State
Wambina	Nature Reserve	NSW
Wolli Creek	Regional Park	NSW
Woollamia	Nature Reserve	NSW
Woregore	Nature Reserve	NSW
Worimi	National Park	NSW
Worimi	Regional Park	NSW
Worimi	State Conservation Area	NSW
Wyrrabalong	National Park	NSW
Yahoo Island	Nature Reserve	NSW
Yarrahapinni Wetlands	National Park	NSW
Yarriabini	National Park	NSW
Yuraarla	Flora Reserve	NSW

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
North East NSW RFA	New South Wales
Southern RFA	New South Wales

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Avoca Lagoon	NSW
Beecroft Peninsula	NSW
Botany Wetlands	NSW
Brisbane Water Estuary	NSW
Clybucca Creek Estuary	NSW
Clyde River Estuary	NSW
Cockrone Lagoon	NSW

Wetland Name	State
Colongra Swamp	NSW
Coomaditchy Lagoon	NSW
Coomonderry Swamp	NSW
Cormorant Beach	NSW
Crowdy Bay National Park	NSW
Cullendulla Creek and Embayment	NSW
Durras Lake	NSW
Eve St. Marsh, Arncliffe	NSW
Five Islands Nature Reserve	NSW
Jervis Bay	NSW
Jervis Bay Sea Cliffs	NSW
Jewells Wetland	NSW
Killalea Lagoon	NSW
Kooragang Nature Reserve	NSW
Lagoon Head	NSW
Lake Illawarra	NSW
Lake Macquarie	NSW
Limeburners Creek Nature Reserve	NSW
Meroo Lake Wetland Complex	NSW
Minnamurra River Estuary	NSW
Myall Lakes	NSW
O'Hares Creek Catchment	NSW
Port Stephens Estuary	NSW
Salt Ash Air Weapons Range	NSW
Shoalhaven/Crookhaven Estuary	NSW
St Georges Basin	NSW
Swan Lagoon	NSW

Wetland Name	State
Swan Pool/Belmore Swamp	NSW
Tabourie Lake	NSW
Termeil Lake Wetland Complex	NSW
Terrigal Lagoon	NSW
Towra Point Estuarine Wetlands	NSW
Tuggerah Lake	NSW
Wallis Lake and adjacent estuarine islands	NSW
Wamberal Lagoon	NSW
Wollumboola Lake	NSW

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
1440- Newcastle Golf Course Alterations	2024/09899		Completed
Albion Park Quarry Extraction Area Stage 7 Extension	2020/8871		Post-Approval
Albion Park Rail Bypass, NSW	2017/7909		Post-Approval
Circular Quay Renewal	2023/09727		Assessment
Cowarra Water Supply Scheme	2023/09581		Assessment
Development of a Residential Care Facility, Middle Head, NSW	2014/7194		Post-Approval
Dunmore Hard Rock Quarry Modification 13	2022/09319		Post-Approval
Dunmore Lakes Sand Project Modification 2 Pond 5B extraction	2023/09552		Completed
Eastern Rise Offshore Wind Project	2023/09544		Assessment
Eastern Rise Offshore Wind Project Initial Marine Field Investigations	2023/09555		Completed
Golf Course Extension	2001/215		Completed
Greenway Wall - Macquarie Lightstation Conservation	2023/09650		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Hawaiki Nui Submarine Cable - Marine Route Survey and Cable Installation	2024/09814		Completed
Hunter-Central Coast Offshore Energy Initial Marine Field Investigations	2023/09480		Completed
Hunter Central-Coast Offshore Energy Project	2023/09478		Assessment
Kamay Ferry Wharves Project	2020/8825		Post-Approval
Kingsford Defence Land Subdivision and Redevelopment	2002/852		Completed
Mara team testing 26-10-2024 001	2024/10036		Completed
MARA Team Testing - Release 38 - Smoke Test -05 April 2024 - To Be Deleted	2024/09849		Post-Approval
MARA Team Testing - Release 39 - 29 April 2024 - To Be Deleted	2024/09866		Approval
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed
PEP11 Site Survey	2009/5093		Completed
Princes Highway upgrade program - Milton Ulladulla bypass	2024/10023		Assessment
Project 2 Witchcliffe - proposed vineyard & dam	2005/2263		Completed
Proposed residential subdivision	2023/09632		Completed
Reserve Bank Head Office Building Asbestos Remediation and Refurbishment	2024/10052		Assessment
Residential development, 11 Jennifer Street, Little Bay, NSW	2018/8170		Completed
Residential development, Hillsborough, NSW	2014/7217		Assessment
Residential Development, Lot 172 DP 755923 and Lot 823 DP 247285, Manyana, NSW	2020/8704		Post-Approval
Riverside residential development, Tea Gardens, NSW	2013/7051		Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
SMAP telecommunications submarine cable installation	2024/09989		Completed
South Pacific Offshore Wind Project	2023/09605		Completed
supersonic missile launch facility	2000/120		Completed
Thrumster Wastewater Scheme	2023/09582		Completed
Walking Track connecting Middle Head Rd & Balmoral Park	2002/572		Completed
West Culburra Residential Subdivision	2023/09524		Approval
Action clearly unacceptable			
Lord Howe Island Renewable Energy Project - Stage 2 Wind Turbines	2016/7790	Action Clearly Unacceptable	Completed
Controlled action			
Australian Institute of Police Management Facilities Upgrade	2006/2746	Controlled Action	Post-Approval
Cabbage Tree Road Sand Quarry, Williamtown, NSW	2016/7852	Controlled Action	Post-Approval
Callala Bay Residential Development	2020/8637	Controlled Action	Post-Approval
Clarence Valley and Coffs Harbour Regional Water Supply Project	2005/2191	Controlled Action	Post-Approval
Construction and operation of the Westconnex New M5, Sydney, NSW	2015/7520	Controlled Action	Post-Approval
Construction of an alternate access route to Lot 218 Salt Ash	2011/6214	Controlled Action	Post-Approval
Cook Cove Southern Precinct development, Sydney, NSW	2016/7767	Controlled Action	Post-Approval
Cooks Cove Development Project	2006/2685	Controlled Action	Post-Approval
Expansion of Port Botany facilities	2002/543	Controlled Action	Post-Approval
Expansion of the NRE No. 1 Colliery Coal Mine in the Southern Coalfield of NSW	2013/6838	Controlled Action	Completed
Extension of Underground Mining Operations at The Bulli Seam Operations	2010/5350	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Former Rifle Range Residential Development, Popplewell Road, Fern Bay, NSW	2017/7993	Controlled Action	Proposed Decision
Garden Island Hammerhead Crane Proposed Removal, NSW	2012/6430	Controlled Action	Post-Approval
Gas Transmission Pipeline	2011/5917	Controlled Action	Completed
Hunter River Port and Transport Corridor	2001/419	Controlled Action	Completed
Hunter River south arm dredging	2003/950	Controlled Action	Post-Approval
Kurnell Sand Extraction and Backfilling Proposal	2002/631	Controlled Action	Completed
Lord Howe Island Rodent Eradication Project, NSW	2016/7703	Controlled Action	Post-Approval
Mineral sand mining	2003/931	Controlled Action	Completed
Moriah War Memorial College expansion	2002/575	Controlled Action	Post-Approval
Myall Shores Eco-Tourism Resort	2002/547	Controlled Action	Post-Approval
Nambucca Heads to Urunga Pacific Highway Upgrade, NSW	2013/6963	Controlled Action	Post-Approval
Newcastle inner city bypass Rankin Park to Jesmond NSW	2015/7550	Controlled Action	Post-Approval
Newcastle LNG export facility	2011/5915	Controlled Action	Completed
Nobby's Lighthouse redevelopment	2006/3179	Controlled Action	Completed
North Manyana Subdivision, NSW	2021/8948	Controlled Action	Further Information Request
North Tuncurry Mixed Use Development	2011/5954	Controlled Action	Direction to Publish
Pacific Highway Upgrade, Warrel Creek to Nambucca Heads, NSW	2013/7101	Controlled Action	Post-Approval
Pacific Highway Upgrade - Coffs Harbour Bypass, NSW	2017/8005	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Pilot Offshore Artificial Reefs	2008/4176	Controlled Action	Post-Approval
Port Macquarie Airport Master Plan implementation and development activities, NSW	2016/7842	Controlled Action	Post-Approval
Port Site and Materials Handling Development	2001/242	Controlled Action	Completed
Protech Cold Mill Facility	2001/274	Controlled Action	Post-Approval
Queensland Hunter Gas Pipeline, approximately 825 km in length	2008/4483	Controlled Action	Completed
Relocation of Grey-Headed Flying-Fox Colony	2008/4646	Controlled Action	Post-Approval
Residential subdivision	2007/3411	Controlled Action	Post-Approval
Residential Subdivision and Town Centre Development, Vincentia	2006/2927	Controlled Action	Post-Approval
Rezoning of land and associated public works to facilitate residential development	2007/3448	Controlled Action	Completed
River Dredging Operations	2001/249	Controlled Action	Completed
Russell Vale Colliery Revised Underground Expansion Project	2020/8702	Controlled Action	Post-Approval
Russell Vale Colliery Underground Expansion Project, NSW	2014/7268	Controlled Action	Completed
Rutile and Zircon Mining on Stockton Rifle Range	2000/8	Controlled Action	Post-Approval
Sand Reclamation to Towra Beach	2003/1085	Controlled Action	Post-Approval
Southern section of the Bonnie Doon Golf Course, Pagewood, NSW	2015/7479	Controlled Action	Completed
Stages 6-16 of a retirement village/Bellevue Road, Forresters Beach	2003/946	Controlled Action	Post-Approval
Steel Mill	2001/231	Controlled Action	Completed
Subdivide and Develop	2008/4419	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Subdivision and Urban Development at Gwandalan and Catherine Hill Bay	2012/6382	Controlled Action	Post-Approval
Sydney Opera House Building Renewal Program, NSW	2016/7825	Controlled Action	Post-Approval
Sydney Opera House Building Renewal Program - Concert Hall and associated works	2017/7955	Controlled Action	Post-Approval
Terminal 4 Coal Export Terminal Project, Kooragang Island	2011/6029	Controlled Action	Post-Approval
Tourist Resort and Associated Facilities	2002/644	Controlled Action	Completed
Tourist Resort and Associated Facilities	2001/449	Controlled Action	Completed
Upgrade of Floodlighting for Night Sports Training	2009/4798	Controlled Action	Completed
Upgrade of surface facilities at NRE No.1 Colliery	2011/5891	Controlled Action	Post-Approval
Upgrade sections of Reid Street, The Boulevard & Tip Gravel Road to improve flood & evacuation acces	2013/6757	Controlled Action	Post-Approval
Vegetation Clearing North Pearl Estate section of Kahibah Creek	2003/997	Controlled Action	Post-Approval
Williamtown Aerospace Park, industrial subdivision and development to service e	2009/5063	Controlled Action	Post-Approval
Not controlled action			
25km upgrade of the Pacific Highway	2007/3910	Not Controlled Action	Completed
Admiralty House, Kirribilli, foreshore works, NSW	2014/7357	Not Controlled Action	Completed
Air Traffic Control Infrastructure Facility	2007/3872	Not Controlled Action	Completed
APX-East sub-sea telecommunications & data cable system	2014/7139	Not Controlled Action	Completed
Austasia Leefield Pty Ltd/Aquaculture/180 Clarke Street, Pindimar/NSW/Land-based Aquaculture Farm	2014/7183	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Australia-USA Southern Cross NEXT fibre optic cable installation	2019/8405	Not Controlled Action	Completed
Batemans Bay Marina Redevelopment	2008/4265	Not Controlled Action	Completed
Biggus-1 Exploration Well	2004/1830	Not Controlled Action	Completed
Botany Bay Cable Project	2007/3552	Not Controlled Action	Completed
Botany Rail Duplication	2019/8566	Not Controlled Action	Completed
BP/Mobil Pipeline to Kingsford Smith Airport	2000/104	Not Controlled Action	Completed
Carbon Black Plant Upgrade	2006/2785	Not Controlled Action	Completed
Clearance of native vegetation to create fire breaks	2004/1534	Not Controlled Action	Completed
Community Title Residential Subdivision, 22km North of Coffs Harbour	2006/2970	Not Controlled Action	Completed
Conservation and Adaptive Use of Quarantine Station	2002/556	Not Controlled Action	Completed
Construction and operation of sewage treatment plant at Thrumster	2005/2312	Not Controlled Action	Completed
Construction of a high-capacity fibre optic submarine cable	2006/2914	Not Controlled Action	Completed
Construction of a temporary film set, Malabar Headlands	2007/3939	Not Controlled Action	Completed
Construction Of Two New Fuel Processing Plants On Existing Site	2003/1243	Not Controlled Action	Completed
Continental slope research/mid-NSW/Commonwealth Waters	2006/3026	Not Controlled Action	Completed
Currawong Beach residential development adjoining Ku-ring-gai Chase National Par	2008/3988	Not Controlled Action	Completed
Demolition and Removal of Two Naval Cottages	2008/4373	Not Controlled Action	Completed
Demolition of Ablutions Block, Snapper Island, NSW	2018/8303	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Demolition of the existing club house and construction of a new club house	2009/4932	Not Controlled Action	Completed
development of a retirement village & facilities	2013/6738	Not Controlled Action	Completed
development of stages 1 - 5 of a retirement village	2003/945	Not Controlled Action	Completed
DOFA weed eradication program at Goorooyaroo NSW	2003/1270	Not Controlled Action	Completed
Dog swimming area	2002/870	Not Controlled Action	Completed
Duke Cogeneration Plant Port Kembla	2001/179	Not Controlled Action	Completed
Environmental Works	2001/396	Not Controlled Action	Completed
Expansion to Kooragang Coal Terminal	2007/3352	Not Controlled Action	Completed
Extension of Hale Street to Foreshore Road and Associated Works	2008/4035	Not Controlled Action	Completed
Extension of Tanilba Northern Dune Sand Mine, Oyster Cove, NSW	2012/6492	Not Controlled Action	Completed
Extension to Lucas Heights production building	2003/1114	Not Controlled Action	Completed
Fitout works, 4th Floor, Sydney Customs House, 31 Alfred Street	2004/1449	Not Controlled Action	Completed
Fort Scratchley refurbishment works	2005/2283	Not Controlled Action	Completed
Fort Scratchley site remediation	2005/2075	Not Controlled Action	Completed
Fuel Reduction Proposal Redfield Road, East Killara	2003/1238	Not Controlled Action	Completed
Garden Island ADI Warehouse	2000/69	Not Controlled Action	Completed
Geological exploration and historical research of convict coal mines beneath For	2004/1421	Not Controlled Action	Completed
George Bass Drive Lilli Pilli Road Realignment	2021/8876	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Georges River Program 2	2003/999	Not Controlled Action	Completed
Green & Golden Bell Frog Habitat Enhancement Project	2004/1795	Not Controlled Action	Completed
Growing of Pearl Oysters at Wanda Head, Mambo Creek and Pindimar Leases.	2003/1157	Not Controlled Action	Completed
Hard Rock Quarry Extension, Lot 11 DP 1025664 Pacific Highway	2004/1358	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Increase of Road Access to 24 Hours a Day 7 Days a Week	2008/4206	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Industrial and Residential Development	2006/2678	Not Controlled Action	Completed
Industrial Subdivision	2004/1859	Not Controlled Action	Completed
Industrial Subdivision, 262-276 Captain Cook Drive	2004/1899	Not Controlled Action	Completed
Installation of Sydney-Guam Submarine Cable	2007/3848	Not Controlled Action	Completed
Installation of viewing platform	2005/2138	Not Controlled Action	Completed
Internal Modifications to Reserve Bank of Australia	2008/4431	Not Controlled Action	Completed
Japan-Guam-Australia Sunshine Coast Branch Marine Cable Route Survey (JGA) QLD	2018/8373	Not Controlled Action	Completed
Lake Illawarra entrance works, Stage 2	2004/1696	Not Controlled Action	Completed
Land based Marine Aquaculture facility	2006/3158	Not Controlled Action	Completed
Land clearing for horticulture (blueberries), South Moonee, NSW	2013/7023	Not Controlled Action	Completed
Little Bay Residential Subdivision	2002/873	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Lord Howe Island Solar Photovoltaic Project	2015/7544	Not Controlled Action	Completed
Lot 2 Foreshore Drive, in-filling pit, Port Kembla, NSW	2018/8374	Not Controlled Action	Completed
Magenta Shores Integrated Tourist Facility and golf course	2003/995	Not Controlled Action	Completed
Metropolitan coal project - continutaion, upgrade and extension of underground m	2008/4519	Not Controlled Action	Completed
Milton/Ulladulla Sewerage Scheme	2001/251	Not Controlled Action	Completed
Myuna Colliery extension of underground mining	2011/5956	Not Controlled Action	Completed
Nelson Bay Rd and Seaside Blvd intersection development, Nelson Bay, NSW	2019/8433	Not Controlled Action	Completed
Nobbys Headland Redevelopment	2008/4672	Not Controlled Action	Completed
Northern Precinct residential development	2007/3412	Not Controlled Action	Completed
Noxious weed removal, Anzac Rifle Range	2002/761	Not Controlled Action	Completed
Noxious weed removal and controlled burn	2003/1272	Not Controlled Action	Completed
Noxious Weed Removal at Anzac Rifle Range	2004/1336	Not Controlled Action	Completed
Pilot study - Short term captive holding of 22 LHI Woodhen & 10 LHI Currawong, Lord Howe Island	2013/6847	Not Controlled Action	Completed
Princes Highway Upgrade, NSW	2013/6968	Not Controlled Action	Completed
Proposed Establishment of the North Tuncurry Stockpile, NSW	2012/6550	Not Controlled Action	Completed
Queensland Hunter Gas Pipeline, approximately 833 km in length	2008/4620	Not Controlled Action	Completed
RAAF Williamtown Upgrade	2001/362	Not Controlled Action	Completed
Rabbit Control Anzac Rifle Range	2005/1940	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
RBA HOWP 65 Martin Place, NSW	2020/8870	Not Controlled Action	Completed
Redevelopment 60 Martin Place, Sydney, NSW	2015/7490	Not Controlled Action	Completed
Redevelopment of the Cronulla Sharks Leagues Club	2011/5889	Not Controlled Action	Completed
Redevelopment of the former Prince Henry Hospital Site	2003/1048	Not Controlled Action	Completed
Rehabilitation works of the Coogee Sewer Diversion Submain - Maxwell Avenue, Mar	2004/1683	Not Controlled Action	Completed
Remediation of contaminated soil around the Macquarie Lighthouse	2004/1836	Not Controlled Action	Completed
Residential Subdivision, Diamond Beach Road, Diamond Beach	2010/5557	Not Controlled Action	Completed
Residential subdivision of 62 Hillside Road, Newport, NSW	2017/8044	Not Controlled Action	Completed
Retail development, Lots 10-14, South Street, Windale, NSW	2013/7031	Not Controlled Action	Completed
Richmond Vale Rail Trail	2019/8568	Not Controlled Action	Completed
Road interchange	2002/592	Not Controlled Action	Completed
Rubbish removal, Anzac Rifle Range	2002/760	Not Controlled Action	Completed
Safe management of vegetation within Obstacle Limitation Surfaces, Coffs Harbour Regional Aerodrome,	2016/7794	Not Controlled Action	Completed
Sale of New South Head Road, Edgecliff	2001/302	Not Controlled Action	Completed
sale of property located at 96, Hunter Street	2003/1097	Not Controlled Action	Completed
Sandgate Rail Grade Separation	2005/1948	Not Controlled Action	Completed
Sandon Point Residential Development	2001/458	Not Controlled Action	Completed
Sawtell Catholic Care of the Aged, NSW	2020/8738	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Seismic Station	2007/3301	Not Controlled Action	Completed
sewage treatmemt plant process and reliability renewals project	2005/2186	Not Controlled Action	Completed
Shellcove Boatharbour Marine, Commercial & Residential Development	2007/3935	Not Controlled Action	Completed
Shipment of Spent Nuclear Fuel to USA	2007/3672	Not Controlled Action	Completed
Ship to ship crude oil lightering	2008/4279	Not Controlled Action	Completed
Ship to Ship Crude Oil Lightering	2001/271	Not Controlled Action	Completed
Shorebird and wader habitat rehabilitation	2001/457	Not Controlled Action	Completed
Silica sand Extraction/Tanilba Northern Dune	2002/729	Not Controlled Action	Completed
Stockpiling of lump coal up to 40,000 tonnes	2003/1304	Not Controlled Action	Completed
Subdivision and sale of Commonwealth land in Pymble to Ku-ring-gai City Council	2004/1368	Not Controlled Action	Completed
Subdivision of Precincts 3 and 12, St Patricks Estate	2004/1925	Not Controlled Action	Completed
Supply of a gigabit ethernet connection with associated trenching, boring and ha	2007/3637	Not Controlled Action	Completed
Sydney Desalination Plant	2005/2331	Not Controlled Action	Completed
Sydney Metro Network Stage 2	2010/5307	Not Controlled Action	Completed
Sydney Primary Loop Gas Pipeline	2006/2622	Not Controlled Action	Completed
Taleb Property Pty Ltd, Tempe Tyres Warehouse project, Captain Cook Drive, Kurnell	2017/8068	Not Controlled Action	Completed
Tallawarra Lands: Urban Development	2011/6002	Not Controlled Action	Completed
Terrigal Sewer Pumping Station Upgrade	2001/128	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Tomago to Tomaree Electricity Supply Upgrade	2003/1023	Not Controlled Action	Completed
Tomago Wetland Rehabilitation Project	2011/5894	Not Controlled Action	Completed
Torpedo Factory Renewal Project	2020/8847	Not Controlled Action	Completed
Tourist accommodation, surf camp and associated amenities.	2004/1685	Not Controlled Action	Completed
Undertake a controlled burn of the Eastern Suburbs Banksia Scrub at Byrne Cresce	2004/1728	Not Controlled Action	Completed
Undertake vegetation removal as per CASA safety requirements	2011/6007	Not Controlled Action	Completed
Undertaking of fire protection measures for the bushland regeneration of the Ranwick Environmental P	2003/959	Not Controlled Action	Completed
Upgrade of Captain Cook Drive	2012/6286	Not Controlled Action	Completed
Upgrading Existing & Developing New Camping Facilities & Amenities	2002/679	Not Controlled Action	Completed
Valentine Substation	2005/1961	Not Controlled Action	Completed
Vegetation removal over sewer infrastructure easement	2013/6725	Not Controlled Action	Completed
Wallarah Peninsula Residential development	2004/1490	Not Controlled Action	Completed
Wallarah Peninsula residential development - coastal sector	2006/2810	Not Controlled Action	Completed
wastewater collection systems and pumping stations	2001/511	Not Controlled Action	Completed
Wreck Bay Housing Development	2001/299	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D marine seismic survey in PEP-11 permit area, NSW	2002/879	Not Controlled Action (Particular Manner)	Post-Approval
Bushland Path Through Malabar Headland West	2007/3790	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Church and School Development	2006/3185	Not Controlled Action (Particular Manner)	Post-Approval
Construction and operation of a subsea telecommunications cable, between Sydney and New Zealand	2015/7480	Not Controlled Action (Particular Manner)	Post-Approval
Construction works on SE corner of the grounds of Admiralty House	2012/6278	Not Controlled Action (Particular Manner)	Post-Approval
Development of Commercial Shellfish Aquaculture Leases within Jervis Bay	2013/6768	Not Controlled Action (Particular Manner)	Post-Approval
Drilling of one exploration well	2010/5664	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Pilot Appraisal Program PEL 458	2011/6154	Not Controlled Action (Particular Manner)	Post-Approval
Fort Wallace Residential Development Proposal, north of Newcastle, NSW	2017/7951	Not Controlled Action (Particular Manner)	Post-Approval
Hawaiki Fibre-Optic Submarine Cable installation	2016/7765	Not Controlled Action (Particular Manner)	Post-Approval
Hyde Park Barracks Proposed New Passenger Lift	2017/7933	Not Controlled Action (Particular Manner)	Post-Approval
Illawarra coal seam gas exploration drilling and gas monitoring program	2011/5821	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
International fibre optic submarine cable installation, between Sydney and Honiara, Solomon Islands	2015/7502	Not Controlled Action (Particular Manner)	Post-Approval
Japan-Guam-Australia (JGA) Fibre Optic Cable project	2016/7795	Not Controlled Action (Particular Manner)	Post-Approval
Kiama Post Office alterations	2006/2940	Not Controlled Action (Particular Manner)	Post-Approval
Kooragang Island coal export terminal	2006/2987	Not Controlled Action (Particular Manner)	Post-Approval
Lake Illawarra Entrance Works (stage 2)	2005/1997	Not Controlled Action (Particular Manner)	Post-Approval
Lowering Blinky Beach Sand Dune to Comply with CASA Regulations for Runway 28, Lord Howe Island	2012/6599	Not Controlled Action (Particular Manner)	Post-Approval
Magenta Shared Pathway Stage 2, NSW	2017/7926	Not Controlled Action (Particular Manner)	Post-Approval
Marine Aquaculture Research Lease, Providence Bay, Port Stephens	2013/6790	Not Controlled Action (Particular Manner)	Post-Approval
Modification of Marine Aquaculture Research Lease and Huon Lease, Port Stephens	2016/7709	Not Controlled Action (Particular Manner)	Post-Approval
Moriah Primary School, Centennial Park, Sydney	2004/1676	Not Controlled Action (Particular Manner)	Post-Approval
Navy Mine Countermeasures Training	2002/812	Not Controlled Action (Particular Manner)	Post-Approval
NBN Transit Fibre Minnamurra Wetlands Section	2011/5900	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Proposed waste transfer station at Tuncurry, Darawant, NSW	2015/7472	Not Controlled Action (Particular Manner)	Post-Approval
Rehabilitation of Hexham Swamp	2003/1244	Not Controlled Action (Particular Manner)	Post-Approval
Removal of heritage buildings from RAAF Base, Williamtown, NSW	2014/7324	Not Controlled Action (Particular Manner)	Post-Approval
Repair and Upgrade of North Avoca Sewerage System	2010/5740	Not Controlled Action (Particular Manner)	Post-Approval
Residential Development	2002/711	Not Controlled Action (Particular Manner)	Post-Approval
Southern Cross Australia-New Zealand-America marine acoustic survey of the seabed	2017/7863	Not Controlled Action (Particular Manner)	Post-Approval
Survey and Sampling of Lord Howe Island Reef	2008/3986	Not Controlled Action (Particular Manner)	Post-Approval
Tasman Global Access submarine cable marine route survey, Narrabeen, NSW	2015/7442	Not Controlled Action (Particular Manner)	Post-Approval
Transport of intermediate level radioactive waste to Lucas Heights, NSW	2015/7437	Not Controlled Action (Particular Manner)	Post-Approval
Transport of OPAL Spent Fuel to France in 2018 and 2025	2016/7841	Not Controlled Action (Particular Manner)	Post-Approval
Vegetation removal adjacent to Kooloonbung Creek Nature Park	2012/6663	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Wastewater Transfer Scheme	2011/5985	Not Controlled Action (Particular Manner)	Post-Approval
Waterfront Facility at HMAS Creswell	2002/658	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Alterations and Additions	2006/3081	Referral Decision	Completed
Beecroft Weapons Range Visitors Centre	2004/1322	Referral Decision	Completed
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed
Demolition and Removal of Five Naval Cottages	2008/4322	Referral Decision	Completed
Demolition of Naval Cottages & Revegetation as Part of SHFT's Headland Park	2005/2128	Referral Decision	Completed
Hybrid Renewable Energy (Solar & Wind Turbine), Lord Howe Island, NSW	2014/7231	Referral Decision	Completed
PEP11 Drilling Program	2009/5094	Referral Decision	Completed
Relocation of Grey-Headed Flying-Fox Colony	2008/4568	Referral Decision	Completed
Renovation and Landscape Rehabilitation of the Championship Course at Royal Sydney Golf Club	2022/9167	Referral Decision	Referral Publication
Residential Development Emerald Beach	2008/4088	Referral Decision	Completed
Riverside Residential and Commercial Development Project	2012/6293	Referral Decision	Completed
Stage 2 Masonry Plant, Port Kembla, NSW	2014/7247	Referral Decision	Completed
World Rally Championship 'Super Special Stage'	2013/6731	Referral Decision	Completed

Key Ecological Features [Resource Information]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Canyons on the eastern continental slope	Temperate east
Lord Howe seamount chain	Temperate east
Shelf rocky reefs	Temperate east
Tasman Front and eddy field	Temperate east
Tasmantid seamount chain	Temperate east
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	Known to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Foraging	Known to occur
Seabirds		
Anous minutus Black Noddy [824]	Breeding	Known to occur
Anous minutus Black Noddy [824]	Foraging	Likely to occur
Anous stolidus Common Noddy [825]	Breeding	Known to occur
Anous stolidus Common Noddy [825]	Foraging	Likely to occur
Ardenna carneipes Flesh-footed Shearwater [82404]	Breeding	Known to occur
Ardenna carneipes Flesh-footed Shearwater [82404]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Ardenna grisea Sooty Shearwater [82651]	Breeding	Known to occur
Ardenna grisea Sooty Shearwater [82651]	Foraging	Likely to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Likely to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	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	Likely to occur
Eudyptula minor Little Penguin [1085]	Breeding	Known to occur
Fregetta grallaria grallaria White-bellied Storm Petrel [64438]	Breeding	Known to occur
Fregetta grallaria grallaria White-bellied Storm Petrel [64438]	Foraging	Likely to occur
Gygis alba White Tern [807]	Breeding	Known to occur
Gygis alba White Tern [807]	Foraging	Likely to occur
Macronectes giganteus Southern Giant Petrel [1060]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Macronectes halli Northern Giant Petrel [1061]	Foraging	Known to occur
Oceanites oceanites Wilsons Storm Petrel [1034]	Migration	Known to occur
Onychoprion fuscata Sooty Tern [82847]	Breeding	Known to occur
Onychoprion fuscata Sooty Tern [82847]	Foraging	Likely to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Breeding	Known to occur
Phaethon rubricauda Red-tailed Tropicbird [994]	Breeding	Known to occur
Phaethon rubricauda Red-tailed Tropicbird [994]	Foraging	Likely to occur
Procellaria parkinsoni Black Petrel [1048]	Foraging	Likely to occur
Procelsterna cerulea Grey Ternlet [64378]	Breeding	Known to occur
Procelsterna cerulea Grey Ternlet [64378]	Foraging	Likely to occur
Pterodroma leucoptera leucoptera Goulds Petrel [26033]	Breeding	Known to occur
Pterodroma leucoptera leucoptera Goulds Petrel [26033]	Foraging	Known to occur
Pterodroma macroptera Great-winged Petrel [1035]	Foraging	Likely to occur
Pterodroma neglecta neglecta Kermadec Petrel [64450]	Foraging	Likely to occur
Pterodroma nigripennis Black-winged Petrel [1038]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Pterodroma nigripennis Black-winged Petrel [1038]	Foraging	Likely to occur
Pterodroma solandri Providence Petrel [1040]	Breeding	Known to occur
Pterodroma solandri Providence Petrel [1040]	Foraging	Likely to occur
Puffinus assimilis Little Shearwater [59363]	Breeding	Known to occur
Puffinus assimilis Little Shearwater [59363]	Foraging	Likely to occur
Sula dactylatra Masked Booby [1021]	Breeding	Known to occur
Sula dactylatra Masked Booby [1021]	Foraging	Likely to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur
Thalassarche cauta steadi White-capped Albatross [82344]	Foraging	Known 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	Likely to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur
Thalasseus bergii Crested Tern [83000]	Foraging	Likely to occur
Sharks		
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Carcharias taurus Grey Nurse Shark [64469]	Migration	Known to occur
Carcharodon carcharias White Shark [64470]	Aggregation	Known to occur
Whales		
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur

Bioregional Assessments		[Resource Information]
SubRegion	BioRegion	Website
Clarence-Moreton	Clarence-Moreton	BA website
Hunter	Northern Sydney Basin	BA website
Sydney	Sydney 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 is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Jul-2025

[Summary](#)
[Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)
[Acknowledgements](#)

Figure: SE Queensland Environmental Sector

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:	3
National Heritage Places:	3
Wetlands of International Importance (Ramsar	3
Great Barrier Reef Marine Park:	41
Commonwealth Marine Area:	8
Listed Threatened Ecological Communities:	12
Listed Threatened Species:	209
Listed Migratory Species:	99

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:	44
Commonwealth Heritage Places:	4
Listed Marine Species:	162
Whales and Other Cetaceans:	38
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	19
Habitat Critical to the Survival of Marine Turtles:	3

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	196
Regional Forest Agreements:	1
Nationally Important Wetlands:	33
EPBC Act Referrals:	477
Key Ecological Features (Marine):	8
Biologically Important Areas:	61
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Legal Status
Gondwana Rainforests of Australia	QLD	Declared property
Great Barrier Reef	QLD	Declared property
K'gari (Fraser Island)	QLD	Declared property

National Heritage Places [Resource Information]

Name	State	Legal Status
Natural		
Gondwana Rainforests of Australia	NSW	Listed place
Great Barrier Reef	QLD	Listed place
K'gari	QLD	Listed place

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Elizabeth and middleton reefs marine national nature reserve	Within Ramsar site
Great sandy strait (including great sandy strait, tin can bay and tin can inlet)	Within Ramsar site
Moreton bay	Within Ramsar site

Great Barrier Reef Marine Park [Resource Information]

Zone Type	Zone ID	IUCN
Buffer	B-22-3012	IV
Commonwealth Island (GBRMPA)	Lady Elliot Island (24008100)	II
Conservation Park	CP-23-4104	IV
Conservation Park	CP-23-4106	IV
Conservation Park	CP-23-4108	IV
Conservation Park	CP-23-4109	IV
Conservation Park	CP-23-4110	IV
Conservation Park	CP-23-4111	IV
Conservation Park	CP-24-4112	IV

Zone Type	Zone ID	IUCN
Conservation Park	CP-24-4113	IV
General Use	GU-21-6016	VI
Habitat Protection	HP-23-5364	VI
Habitat Protection	HP-23-5365	VI
Habitat Protection	HP-23-5366	VI
Habitat Protection	HP-23-5367	VI
Habitat Protection	HP-23-5369	VI
Habitat Protection	HP-23-5370	VI
Habitat Protection	HP-23-5371	VI
Habitat Protection	HP-23-5372	VI
Habitat Protection	HP-23-5373	VI
Habitat Protection	HP-23-5374	VI
Habitat Protection	HP-24-5375	VI
Habitat Protection	HP-24-5376	VI
Habitat Protection	HP-24-5377	VI
Marine National Park	MNP-21-1141	II
Marine National Park	MNP-22-1154	II
Marine National Park	MNP-23-1157	II
Marine National Park	MNP-23-1162	II
Marine National Park	MNP-23-1164	II
Marine National Park	MNP-23-1165	II
Marine National Park	MNP-23-1166	II
Marine National Park	MNP-23-1167	II
Marine National Park	MNP-23-1168	II
Marine National Park	MNP-23-1169	II
Marine National Park	MNP-23-1170	II
Marine National Park	MNP-24-1171	II

Zone Type	Zone ID	IUCN
Marine National Park	MNP-24-1172	II
Marine National Park	MNP-24-1173	II
Preservation	P-23-35	IA
Scientific Research	SR-23-2009	IA
Scientific Research (closed to public access)	SR-23-2010	IA

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
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
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area

Community Name	Threatened Category	Presence Text
Dunn's white gum (Eucalyptus dunnii) moist forest in north-east New South Wales and south-east Queensland	Endangered	Community may occur within area
Grey box-grey gum wet forest of subtropical eastern Australia	Endangered	Community may occur within area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area
Weeping Myall Woodlands	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

Scientific Name	Threatened Category	Presence Text
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
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 known to occur within area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically 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

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
Epthianura crocea macgregori Capricorn Yellow Chat, Yellow Chat (Dawson) [67090]	Critically Endangered	Species or species habitat known to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat known to occur within area
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
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	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
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

Scientific Name	Threatened Category	Presence Text
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	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
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
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 may occur within area

Scientific Name	Threatened Category	Presence Text
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area
Pterodroma heraldica Herald Petrel [66973]	Critically Endangered	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	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 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

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta		
Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	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	Species or species habitat likely to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
Turnix melanogaster		
Black-breasted Button-quail [923]	Vulnerable	Species or species habitat known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area
CRUSTACEAN		
Cherax robustus		
Sand Yabby [91922]	Vulnerable	Species or species habitat known to occur within area
FISH		
Amphiprion mccullochi		
Whitesnout Anemonefish, McCulloch's Anemonefish [76925]	Critically Endangered	Species or species habitat known to occur within area
Epinephelus daemelii		
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus whitei		
White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	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
Maccullochella mariensis		
Mary River Cod [83806]	Endangered	Translocated population known to occur within area
Mordacia praecox		
Non-parasitic Lamprey, Precocious Lamprey [81530]	Endangered	Species or species habitat likely to occur within area
Nannoperca oxleyana		
Oxleyan Pygmy Perch [64468]	Endangered	Species or species habitat known to occur within area
Pseudomugil mellis		
Honey Blue Eye, Honey Blue-eye [26180]	Endangered	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
Seriolella brama		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
Assa darlingtoni		
Pouched Frog [1965]	Vulnerable	Species or species habitat known to occur within area
Litoria aurea		
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria olongburensis		
Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
[Mixophyes balbus](#)		
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area
[Mixophyes fleayi](#)		
Fleay's Frog [25960]	Endangered	Species or species habitat likely to occur within area
[Mixophyes iteratus](#)		
Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat known to occur within area
INSECT		
[Argynnis hyperbius inconstans](#)		
Australian Fritillary [88056]	Critically Endangered	Species or species habitat likely to occur within area
[Phyllodes imperialis smithersi](#)		
Pink Underwing Moth [86084]	Endangered	Species or species habitat known to occur within area
MAMMAL		
[Balaenoptera borealis](#)		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Balaenoptera musculus](#)		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
[Balaenoptera physalus](#)		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Chalinolobus dwyeri](#)		
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known to occur within area
[Dasyurus hallucatus](#)		
Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Macroderma gigas		
Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Notamacropus parma		
Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat known to 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
Petrogale penicillata		
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may 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 known to occur within area
Potorous tridactylus tridactylus		
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat known to occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding known to occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat known to occur within area
PLANT		
Acacia attenuata [10690]	Vulnerable	Species or species habitat known to occur within area
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat known to occur within area
Allocasuarina emuina Emu Mountain Sheoak, Mt Emu She-oak [21926]	Endangered	Species or species habitat known to occur within area
Allocasuarina thalassoscopica [21927]	Endangered	Species or species habitat known to occur within area
Angophora robur Sandstone Rough-barked Apple [56088]	Vulnerable	Species or species habitat may occur within area
Apatophyllum olsenii [7718]	Vulnerable	Species or species habitat may occur within area
Archidendron lovelliae Bacon Wood, Tulip Siris [13451]	Vulnerable	Species or species habitat known to occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Atalaya collina Yarwun Whitewood [55417]	Endangered	Species or species habitat may occur within area
Baloghia marmorata Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat likely to occur within area
Boronia umbellata Orara Boronia [56301]	Vulnerable	Species or species habitat known to occur within area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat known to occur within area
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat likely to occur within area
Clematis fawcettii Stream Clematis [4311]	Vulnerable	Species or species habitat may occur within area
Coleus habrophyllus listed as Plectranthus habrophyllus [91378]	Endangered	Species or species habitat known to occur within area
Coleus nitidus listed as Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [91380]	Endangered	Species or species habitat likely to occur within area
Coleus omissus listed as Plectranthus omissus [91381]	Endangered	Species or species habitat may occur within area
Corchorus cunninghamii Native Jute [14659]	Endangered	Species or species habitat likely to occur within area
Corokia whiteana [17820]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Corynocarpus rupestris subsp. rupestris Glenugie Karaka [19303]	Vulnerable	Species or species habitat known to occur within area
Cossinia australiana Cossinia [3066]	Endangered	Species or species habitat likely to occur within area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	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
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat known to occur within area
Cycas megacarpa [55794]	Endangered	Species or species habitat known to occur within area
Cycas ophiolitica [55797]	Endangered	Species or species habitat may occur within area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat known to occur within area
Davidsonia jerseyana Davidson's Plum [67219]	Endangered	Species or species habitat known to occur within area
Davidsonia johnsonii Smooth Davidsonia, Smooth Davidson's Plum, Small-leaved Davidson's Plum [67178]	Endangered	Species or species habitat known to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diospyros mabacea Red-fruited Ebony, Silky Persimmon, Ebony [18548]	Endangered	Species or species habitat likely to occur within area
Diploglottis campbellii Small-leaved Tamarind [21484]	Endangered	Species or species habitat known to occur within area
Elaeocarpus williamsianus Hairy Quandong [8956]	Endangered	Species or species habitat known to occur within area
Endiandra floydii Floyd's Walnut, Crystal Creek Walnut [52955]	Endangered	Species or species habitat known to occur within area
Endiandra hayesii Rusty Rose Walnut, Velvet Laurel [13866]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus conglomerata Swamp Stringybark [3160]	Endangered	Species or species habitat known to occur within area
Eucalyptus hallii Goodwood Gum [20433]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus tetrapleura Square-fruited Ironbark [7490]	Vulnerable	Species or species habitat known to occur within area
Euphorbia obliqua a herb [44385]	Vulnerable	Species or species habitat likely to occur within area
Floydia praealta Ball Nut, Possum Nut, Big Nut, Beefwood [15762]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Fontainea australis Southern Fontainea [24037]	Vulnerable	Species or species habitat likely to occur within area
Fontainea oraria Coastal Fontainea [24038]	Critically Endangered	Species or species habitat known to occur within area
Fontainea venosa [24040]	Vulnerable	Species or species habitat may occur within area
Germainia capitata [14069]	Vulnerable	Species or species habitat known to occur within area
Gossia fragrantissima Sweet Myrtle, Small-leaved Myrtle [78867]	Endangered	Species or species habitat known to occur within area
Gossia gonoclada Angle-stemmed Myrtle [78866]	Endangered	Species or species habitat likely to occur within area
Graptophyllum reticulatum Veiny Graptophyllum [55459]	Endangered	Species or species habitat known to occur within area
Hibbertia marginata [21970]	Vulnerable	Species or species habitat may occur within area
Hicksbeachia pinnatifolia Monkey Nut, Bopple Nut, Red Bopple, Red Bopple Nut, Red Nut, Beef Nut, Red Apple Nut, Red Boppel Nut, Ivory Silky Oak [21189]	Vulnerable	Species or species habitat known to occur within area
Homoranthus floydii [55187]	Vulnerable	Species or species habitat may occur within area
Isoglossa eranthemoides Isoglossa [16663]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Leichhardtia brevifolia listed as Marsdenia brevifolia [91893]	Vulnerable	Species or species habitat may occur within area
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat known to occur within area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat known to occur within area
Macadamia ternifolia Small-fruited Queensland Nut, Gympie Nut [7214]	Vulnerable	Species or species habitat known to occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat known to occur within area
Macrozamia lomandroides cycad [55406]	Endangered	Species or species habitat known to occur within area
Macrozamia pauli-guilielmi Pineapple Zamia [5712]	Endangered	Species or species habitat known to occur within area
Melichrus sp. Newfoundland State Forest (P.Gilmour 7852) Hairy Melichrus [82048]	Endangered	Species or species habitat likely to occur within area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to occur within area
Ochrosia moorei Southern Ochrosia [11350]	Endangered	Species or species habitat known to occur within area
Olax angulata Minnie Waters Olax [10666]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Olearia hygrophila Swamp Daisy, Water Daisy [5631]	Endangered	Species or species habitat known to occur within area
Owenia cepiodora Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat known to occur within area
Parsonsia dorrigoensis Milky Silkpod [64684]	Endangered	Species or species habitat known to occur within area
Parsonsia larcomensis Mt Larcom Silk Pod [64587]	Vulnerable	Species or species habitat known to occur within area
Paspalidium grandispiculatum a grass [10838]	Vulnerable	Species or species habitat likely to occur within area
Pedleya acanthoclada listed as Desmodium acanthocladum Thorny Pea [93275]	Vulnerable	Species or species habitat likely to occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat known to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat known to occur within area
Phaius bernaysii Yellow Swamp-orchid [4918]	Endangered	Species or species habitat known to occur within area
Planchonella eerwah Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered	Species or species habitat known to occur within area
Prasophyllum wallum Wallum Leek-orchid [55148]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Prostanthera palustris Swamp Mint-bush [66703]	Critically Endangered	Species or species habitat known to occur within area
Randia moorei Spiny Gardenia [10577]	Endangered	Species or species habitat known to occur within area
Rhodamnia maideniana Smooth Scrub Turpentine [20665]	Critically Endangered	Species or species habitat known to occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area
Romnalda strobilacea [5948]	Vulnerable	Species or species habitat may occur within area
Rutidosis heterogama Heath Wrinklewort [13132]	Vulnerable	Species or species habitat known to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat known to occur within area
Samadera sp. Moonee Creek (J.King s.n. Nov. 1949) [86885]	Endangered	Species or species habitat known to occur within area
Sarcochilus fitzgeraldii Ravine Orchid [19131]	Vulnerable	Species or species habitat may occur within area
Sophora fraseri [8836]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Symplocos baeuerlenii		
Small-leaved Hazelwood, Shrubby Hazelwood [19010]	Vulnerable	Species or species habitat may occur within area
Syzygium hodgkinsoniae		
Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat known to occur within area
Syzygium moorei		
Rose Apple, Coolamon, Robby, Durobby, Watermelon Tree, Coolamon Rose Apple [12284]	Vulnerable	Species or species habitat known to occur within area
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area
Triunia robusta		
Glossy Spice Bush [14747]	Endangered	Species or species habitat known to occur within area
Vincetoxicum woollsii listed as Tylophora woollsii		
[40080]	Endangered	Species or species habitat likely to occur within area
Zieria exsul		
Banished Stink Bush [84829]	Critically Endangered	Species or species habitat known to occur within area
Zieria prostrata		
Headland Zieria [56782]	Endangered	Species or species habitat known to occur within area
REPTILE		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Coeranoscincus reticulatus		
Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding known to occur within area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat known to occur within area
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat known to occur within area
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Saltuarius moritzi New England Leaf-tailed Gecko, Moritz's Leaf-tailed Gecko [89490]	Endangered	Species or species habitat known to occur within area
SHARK		

Scientific Name	Threatened Category	Presence Text
Carcharias taurus (east coast population)		
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Congregation or aggregation known to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Congregation or aggregation 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
Galeorhinus galeus		
School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area
SNAIL		
Thersites mitchellae		
Mitchell's Rainforest Snail [66774]	Critically Endangered	Species or species habitat known to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area
[Ardenna carneipes](#) Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat known to occur within area
[Ardenna grisea](#) Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area
[Ardenna pacifica](#) Wedge-tailed Shearwater [84292]		Breeding known to occur within area
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat 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
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
[Hydroprogne caspia](#) Caspian Tern [808]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sterna sumatrana Black-naped Tern [800]		Breeding known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to 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

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	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	Species or species habitat likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may 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
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharias taurus Grey Nurse Shark [64469]		Congregation or aggregation known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Congregation or aggregation known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding known to occur within area
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area

Scientific Name	Threatened Category	Presence Text
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]	Vulnerable	Breeding known to occur within area
Migratory Terrestrial Species		
Cuculus optatus		
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava		
Yellow Wagtail [644]		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

Scientific Name	Threatened Category	Presence Text
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris subminuta Long-toed Stint [861]		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]		Roosting 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 known to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Roosting known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
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 known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Breeding 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 incana Wandering Tattler [831]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Communications, Information Technology and the Arts - Australian Postal Corporation	
Commonwealth Land - Australian Postal Commission [11303]	NSW
Commonwealth Land - Australian Postal Corporation [11326]	NSW
Communications, Information Technology and the Arts - Telstra Corporation Limited	
Commonwealth Land - Australian Telecommunications Commission [11235]	NSW
Commonwealth Land - Australian Telecommunications Commission [11239]	NSW
Commonwealth Land - Australian Telecommunications Commission [11296]	NSW
Commonwealth Land - Australian Telecommunications Commission [11302]	NSW
Commonwealth Land - Australian Telecommunications Commission [11300]	NSW
Commonwealth Land - Australian Telecommunications Commission [11348]	NSW
Commonwealth Land - Australian Telecommunications Commission [11349]	NSW
Commonwealth Land - Australian Telecommunications Commission [11301]	NSW
Commonwealth Land - Australian Telecommunications Commission [11298]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [11299]	NSW
Commonwealth Land - Australian Telecommunications Commission [11287]	NSW
Commonwealth Land - Australian Telecommunications Commission [11241]	NSW
Commonwealth Land - Australian Telecommunications Commission [11242]	NSW
Commonwealth Land - Australian Telecommunications Commission [11240]	NSW
Commonwealth Land - Australian Telecommunications Corporation [11237]	NSW
Commonwealth Land - Telstra Corporation Limited [11292]	NSW
Commonwealth Land - Telstra Corporation Limited [11293]	NSW
Commonwealth Land - Telstra Corporation Limited [15601]	NSW
Commonwealth Land - Telstra Corporation Limited [11325]	NSW
Defence	
Defence - GLADSTONE ARES DEPOT [31002]	QLD
Defence - SANDGATE TRAINING DEPOT [30209]	QLD
Defence - SOUTHPORT TRAINING DEPOT [31003]	QLD
Defence - TIN CAN BAY TRAINING AREA [31254]	QLD
Defence - TIN CAN BAY TRAINING AREA [31255]	QLD
Defence - TIN CAN BAY TRAINING AREA [31258]	QLD
Defence - TIN CAN BAY TRAINING AREA [31259]	QLD
Defence - Training Ship Tyalgum [31860]	QLD
Defence - TS VAMPIRE [10019]	NSW
Defence - TS VAMPIRE [10020]	NSW
Defence - Defence Housing Authority	
Commonwealth Land - Defence Housing Authority [11323]	NSW
Commonwealth Land - Defence Housing Authority [11324]	NSW
Commonwealth Land - Director of War Service Homes [11294]	NSW
Transport and Regional Services	

Commonwealth Land Name	State
Commonwealth Land - Coral Sea Islands [44]	CST
Commonwealth Land - Coral Sea Islands [45]	CST
Commonwealth Land - Coral Sea Islands [43]	CST
Commonwealth Land - Coral Sea Islands [42]	CST
Commonwealth Land - Coral Sea Islands [41]	CST
Unknown	
Commonwealth Land - [11234]	NSW
Commonwealth Land - [11236]	NSW
Commonwealth Land - [15713]	NSW
Commonwealth Land - [14475]	NSW
Commonwealth Land - [14476]	NSW

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Byron Bay Post Office	NSW	Listed place
Cape Byron Lighthouse	NSW	Listed place
Lady Elliot Island Lightstation	QLD	Listed place
Natural		
Wide Bay Military Reserve	QLD	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous minutus		
Black Noddy [824]		Breeding known to occur within area
Anous stolidus		
Common Noddy [825]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat known to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		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]		Breeding likely to occur within area overfly marine 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 overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat 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 subminuta Long-toed Stint [861]		Roosting known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within 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
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat 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 known to occur within area overfly marine area
Gallinago stenura		
Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Glareola maldivarum Oriental Pratincole [840]		Roosting known to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Breeding known to 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
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		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
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
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

Scientific Name	Threatened Category	Presence Text
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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 known to occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding known to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area overfly marine area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may 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]		Breeding likely to occur within area
Pterodroma nigripennis Black-winged Petrel [1038]		Breeding known to 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 known 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 dougallii Roseate Tern [817]		Breeding known to occur within area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Sterna sumatrana Black-naped Tern [800]		Breeding known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		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	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	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat likely to occur within area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding known to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding known to occur within area
Tringa 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 incana as Heteroscelus incanus Wandering Tattler [831]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
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		

Scientific Name	Threatened Category	Presence Text
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys haematopterus Reef-top Pipefish [66201]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area
Corythoichthys paxtoni Paxton's Pipefish [66204]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Cosmocampus darrosanus D'Arros Pipefish [66207]		Species or species habitat may occur within area
Cosmocampus howensis Lord Howe Pipefish [66208]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus boothae Booth's Pipefish [66218]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus macrorhynchus Whiskered Pipefish, Ornate Pipefish [66222]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus bargibanti Pygmy Seahorse [66721]		Species or species habitat may occur within area
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat known to occur within area
Hippocampus zebra Zebra Seahorse [66241]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area
Nannocampus pictus Painted Pipefish, Reef Pipefish [66263]		Species or species habitat may occur within area
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Stigmatopora nigra](#) Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
[Syngnathoides biaculeatus](#) Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
[Trachyrhamphus bicoarctatus](#) Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
[Trachyrhamphus longirostris](#) Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
[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
Mammal		
[Dugong dugon](#) Dugong [28]		Species or species habitat known to occur within area
Reptile		
[Aipysurus duboisii](#) Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area
[Aipysurus laevis](#) Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
[Aipysurus mosaicus as Aipysurus eydouxii](#) Mosaic Sea Snake [87261]		Species or species habitat may occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding known to occur within area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area
Hydrophis peronii as Acalyptophis peronii Horned Sea Snake [93509]		Species or species habitat may occur within area
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis stokesii as Astrotia stokesii		
Stokes' Sea Snake [93510]		Species or species habitat may occur within area
Laticauda colubrina		
Yellow-lipped Sea Krait [1092]		Species or species habitat may occur within area
Laticauda laticaudata		
a sea krait [1093]		Species or species habitat may occur within area
Lepidochelys olivacea		
Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata		
Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis		
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
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
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Central Eastern	Habitat Protection Zone (IUCN IV)
Coral Sea	Habitat Protection Zone (IUCN IV)
Gifford	Habitat Protection Zone (IUCN IV)
Lord Howe	Habitat Protection Zone (IUCN IV)
Lord Howe	Habitat Protection Zone (Lord Howe) (IUCN IV)
Coral Sea	Habitat Protection Zone (Reefs) (IUCN IV)
Coral Sea	Habitat Protection Zone (Reefs) (IUCN IV)
Central Eastern	Multiple Use Zone (IUCN VI)
Lord Howe	Multiple Use Zone (IUCN VI)
Solitary Islands	Multiple Use Zone (IUCN VI)
Central Eastern	National Park Zone (IUCN II)
Coral Sea	National Park Zone (IUCN II)
Lord Howe	National Park Zone (IUCN II)
Solitary Islands	National Park Zone (IUCN II)
Lord Howe	Recreational Use Zone (IUCN IV)
Coral Sea	Special Purpose Zone (Trawl) (IUCN VI)
Coral Sea	Special Purpose Zone (Trawl) (IUCN VI)
Coral Sea	Special Purpose Zone (Trawl) (IUCN VI)
Solitary Islands	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus		
Flatback Turtle [59257]	Nesting	Known to occur

Scientific Name	Behaviour	Presence
Nov-Feb		
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Arakwal	National Park	NSW
Arthur Harrold	Nature Refuge	QLD
Baffle Creek	Fish Habitat Area (A)	QLD
Baffle Creek	Fish Habitat Area (B)	QLD
Ballina	Nature Reserve	NSW
Barubbra Island	Conservation Park	QLD
Bayview	Conservation Park	QLD
Beachmere	Conservation Park	QLD
Beach Road	Nature Refuge	QLD
Beelbi	Fish Habitat Area (A)	QLD
Beelbi	Fish Habitat Area (B)	QLD
Bill Huxley	Nature Refuge	QLD
Billinudgel	Nature Reserve	NSW
Bird Island	Conservation Park	QLD
Bottle Creek	Conservation Park	QLD
Boyne Island	Conservation Park	QLD
Bribie Island	National Park	QLD
Broadwater	Conservation Park	QLD
Broadwater	National Park	NSW

Protected Area Name	Reserve Type	State
Broken Head	Nature Reserve	NSW
Brunswick Heads	Nature Reserve	NSW
Buckleys Hole	Conservation Park	QLD
Buderim Forest	Nature Refuge	QLD
Buderim Forest Park	Nature Refuge	QLD
Bullock Creek	Conservation Park	QLD
Bundjalung	National Park	NSW
Burleigh Head	National Park	QLD
Burleigh Knoll	Conservation Park	QLD
Burrum	Fish Habitat Area (B)	QLD
Burrum	Fish Habitat Area (A)	QLD
Burrum Coast	National Park	QLD
Bustard Head	Conservation Park	QLD
Cabbage Tree Point	Conservation Park	QLD
Cape Byron	State Conservation Area	NSW
Cape Byron	Marine Park	NSW
Cape Moreton	Conservation Park	QLD
Capricornia Cays	National Park	QLD
Capricornia Cays	National Park (Scientific)	QLD
Carbrook Wetlands 1	Conservation Park	QLD
Carbrook Wetlands 2	Conservation Park	QLD
Castle Tower	National Park	QLD
Clarence Estuary	Nature Reserve	NSW
Cobaki	Nature Reserve	NSW
Coffs Coast	Regional Park	NSW
Colosseum Inlet	Fish Habitat Area (B)	QLD

Protected Area Name	Reserve Type	State
Colosseum Inlet	Fish Habitat Area (A)	QLD
Cook Island	Nature Reserve	NSW
Cook Island	Aquatic Reserve	NSW
Coolnwynpin	Nature Refuge	QLD
Coolnwynpin Creek Corridor Koala (A)	Nature Refuge	QLD
Coolnwynpin Creek Corridor Koala (B)	Nature Refuge	QLD
Cooloola (Noosa River)	Resources Reserve	QLD
Coolum Creek	Nature Refuge	QLD
Coolum Creek	Conservation Park	QLD
Coombabah	Fish Habitat Area (B)	QLD
Coomera	Fish Habitat Area (B)	QLD
Cudgen	Nature Reserve	NSW
Cudgera Creek	Nature Reserve	NSW
Cumbebin Swamp	Nature Reserve	NSW
Currimundi Lake (Kathleen McArthur)	Conservation Park	QLD
Currumbin Creek	Fish Habitat Area (B)	QLD
Currumbin Hill	Conservation Park	QLD
Curtis Island	National Park	QLD
Curtis Island	Nature Refuge	QLD
Curtis Island	Conservation Park	QLD
D?-ral-l? (Calliope River)	Fish Habitat Area (B)	QLD
David Fleay	Conservation Park	QLD
Dawson Road	Nature Refuge	QLD
Deception Bay	Conservation Park	QLD
Deception Bay	Fish Habitat Area (A)	QLD
Deepwater	National Park	QLD
Doonan Wetlands	Nature Refuge	QLD

Protected Area Name	Reserve Type	State
Double Island Point	Conservation Park	QLD
Duggan	Conservation Park	QLD
Edward Corbould Reserve and Retreat	Nature Refuge	QLD
Elliott River	Fish Habitat Area (A)	QLD
Eudlo Creek	Conservation Park	QLD
Eurimbula	National Park	QLD
Eurimbula	Resources Reserve	QLD
Eurimbula	Fish Habitat Area (A)	QLD
Ex-HMAS Brisbane	Conservation Park	QLD
Fitzroy River	Fish Habitat Area (A)	QLD
Fort Lytton	National Park	QLD
Freshwater	National Park	QLD
Garby	Nature Reserve	NSW
Garden Island	Conservation Park	QLD
Gheebulum Kunungai (Moreton Island)	National Park	QLD
Girraween	Nature Refuge	QLD
Goat Island	Conservation Park	QLD
Goat Island (Noosa River)	Conservation Park	QLD
Great Barrier Reef Coast	Marine Park	QLD
Great Sandy	Conservation Park	QLD
Great Sandy	Resources Reserve	QLD
Great Sandy	National Park	QLD
Great Sandy	Marine Park	QLD
Hays Inlet	Fish Habitat Area (A)	QLD
Hays Inlet 1	Conservation Park	QLD
Hays Inlet 2	Conservation Park	QLD
Iluka	Nature Reserve	NSW

Protected Area Name	Reserve Type	State
Jinangong	Nature Reserve	NSW
Joseph Banks (Round Hill Head)	Conservation Park	QLD
Julian Rocks Nguthungulli	Nature Reserve	NSW
Jumpinpin-Broadwater	Fish Habitat Area (A)	QLD
Jumpinpin-Broadwater	Fish Habitat Area (B)	QLD
K'gari	Fish Habitat Area (B)	QLD
Kauri Creek	Fish Habitat Area (A)	QLD
Keyser Island	Conservation Park	QLD
King Island	Conservation Park	QLD
Kinkuna	Fish Habitat Area (A)	QLD
Kippa-Ring	Fish Habitat Area (A)	QLD
Kolan River	Fish Habitat Area (B)	QLD
Koolkuna	Nature Refuge	QLD
Littabella	National Park	QLD
Little Pimlico Island	Nature Reserve	NSW
Maaroom	Fish Habitat Area (A)	QLD
Main Beach	Conservation Park	QLD
Maroochy	Fish Habitat Area (B)	QLD
Maroochy	Fish Habitat Area (A)	QLD
Maroochy River	Conservation Park	QLD
Maroochy Wetlands	Conservation Park	QLD
Marshalls Creek	Nature Reserve	NSW
Merala	Nature Refuge	QLD
Mon Repos	Conservation Park	QLD
Mooloolah River	National Park	QLD
Moonee Beach	Nature Reserve	NSW
Moreton Banks	Fish Habitat Area (A)	QLD

Protected Area Name	Reserve Type	State
Moreton Bay	Marine Park	QLD
Moreton Bay Boys College	Nature Refuge	QLD
Mountain Creek Conservation Area	Nature Refuge	QLD
Mount Coolum	National Park	QLD
Mouth of Baffle Creek 1	Conservation Park	QLD
Mouth of Baffle Creek 2	Conservation Park	QLD
Mouth of Kolan River	Conservation Park	QLD
Mud Island	Conservation Park	QLD
Myora	Conservation Park	QLD
Myora - Amity Banks	Fish Habitat Area (A)	QLD
Naree Budjong Djara	Conservation Park	QLD
Naree Budjong Djara	National Park	QLD
Ningi Creek	Conservation Park	QLD
Noosa	Conservation Park	QLD
Noosa	National Park	QLD
Noosa	Resources Reserve	QLD
Noosa North Shore	Nature Refuge	QLD
Noosa River	Fish Habitat Area (A)	QLD
Noosa River	Fish Habitat Area (B)	QLD
North Rock	Nature Reserve	NSW
North Solitary Island	Nature Reserve	NSW
North-West Solitary Island	Nature Reserve	NSW
O'Regan Creek	Conservation Park	QLD
Peel Island	Fish Habitat Area (A)	QLD
Pimpama	Conservation Park	QLD
Pimpama	Fish Habitat Area (B)	QLD
Pine Ridge	Conservation Park	QLD

Protected Area Name	Reserve Type	State
Pipeclay	National Park	QLD
Poona	National Park	QLD
Pumicestone	National Park	QLD
Pumicestone Channel	Fish Habitat Area (A)	QLD
Pumicestone Channel	Fish Habitat Area (B)	QLD
Reedy Creek	Nature Refuge	QLD
Richmond River	Nature Reserve	NSW
Rodds Harbour	Fish Habitat Area (B)	QLD
Rodds Harbour	Fish Habitat Area (A)	QLD
Sandy Cape	Conservation Park	QLD
Seventeen Seventy-Round Hill	Fish Habitat Area (A)	QLD
Seventeen Seventy-Round Hill	Fish Habitat Area (B)	QLD
Sheep Island	Conservation Park	QLD
Sherwood	Nature Reserve	NSW
Solitary Islands	Marine Park	NSW
Southend	Conservation Park	QLD
Southern Moreton Bay Islands	National Park	QLD
South Stradbroke Island	Conservation Park	QLD
South West Solitary Island	Nature Reserve	NSW
St Helena Island	National Park	QLD
Susan River	Fish Habitat Area (A)	QLD
Susan River	Fish Habitat Area (B)	QLD
Tainsh's	Nature Refuge	QLD
Tallebudgera Creek	Conservation Park	QLD
Tallebudgera Creek	Fish Habitat Area (B)	QLD
Tandora	Nature Refuge	QLD
Tandora Wetland	Nature Refuge	QLD

Protected Area Name	Reserve Type	State
Teerk Roo Ra	National Park	QLD
Teerk Roo Ra	Conservation Park	QLD
Tin Can Inlet	Fish Habitat Area (A)	QLD
Tingalpa Creek	Conservation Park	QLD
Ti-Tree Lake	Aboriginal Area	NSW
Tweed Estuary	Nature Reserve	NSW
Tweed Heads	Historic Site	NSW
Tyagarah	Nature Reserve	NSW
Ukerebagh	Nature Reserve	NSW
Uralba	Nature Reserve	NSW
Weyba	Nature Refuge	QLD
Weyba Creek	Conservation Park	QLD
Wild Cattle Island	National Park	QLD
Woongoolba	Conservation Park	QLD
Wooyung	Nature Reserve	NSW
Yuraygir	National Park	NSW

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
North East NSW RFA	New South Wales

Nationally Important Wetlands

[Resource Information]

Wetland Name	State
Billinudgel Nature Reserve	NSW
Bribie Island	QLD
Bundjalung National Park	NSW
Burrum Coast	QLD
Bustard Bay Wetlands	QLD

Wetland Name	State
Carbrook Wetlands Aggregation	QLD
Clarence River Estuary	NSW
Colosseum Inlet - Rodds Bay	QLD
Cook Island Nature Reserve	NSW
Coolum Creek and Lower Maroochy River	QLD
Cudgen Nature Reserve	NSW
Deepwater Creek	QLD
Elizabeth and Middleton Reefs	EXT
Fraser Island	QLD
Great Barrier Reef Marine Park	QLD
Great Sandy Strait	QLD
Lake Coombabah	QLD
Lake Hiawatha and Minnie Water	NSW
Lake Weyba	QLD
Lower Mooloolah River	QLD
Moreton Bay	QLD
Noosa River Wetlands	QLD
Northeast Curtis Island	QLD
North Stradbroke Island	QLD
Pine River and Hayes Inlet	QLD
Port Curtis	QLD
Pumicestone Passage	QLD
Solitary Islands Marine Park	NSW
The Narrows	QLD
Ukerebagh Island Nature Reserve	NSW
Upper Pumicestone Coastal Plain	QLD
Wide Bay Military Training Area C	QLD

Wetland Name	State
Wooloweyah Lagoon	NSW

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Access for industrial subdivision	2023/09663		Completed
Ampol Future Fuels Gasoline Desulfurisation Project	2022/09443		Completed
Aquaculture Facility	2000/87		Completed
Aura South self-contained master-planned community	2023/09548		Assessment
Bayhill Estate	2020/8863		Post-Approval
Beachmere South Sand Extraction Expansion Project	2023/09755		Assessment
Bokarina Beach development, Nicklin Way, Bokarina, QLD	2015/7501		Completed
Boyne Tannum Aquatic Recreation Centre	2022/09442		Completed
Brisbane Airport Link Tunnel Project	2005/2487		Completed
Bundilla Residential Community Development SP 147314 and RP 139226	2004/1343		Completed
Caloundra South Master Planned Community	2011/5987		Post-Approval
Caloundra South Sewer Rising Main	2022/09391		Completed
Caloundra Transport Corridor Upgrade Project	2024/09956		Assessment
Channel Dredging and Spoil Disposal	2000/21		Completed
Coombabah Sewage Treatment Plant Staged Upgrades and Expansion	2020/8793		Completed
Coomera Woods Master Planned Development, 49 & 51 George Alexander Way, Coomera, Qld	2017/8134		Assessment
CQ-H2 Hydrogen Transport Facility (HTF) Project	2024/09901		Assessment

Title of referral	Reference	Referral Outcome	Assessment Status
CQ-H2 Surplus Industrial Water Pipeline (SIWP) Project	2024/09935		Assessment
Direct Sunshine Coast Rail Line	2024/09972		Assessment
Diversion of South Buderim Sewerage to Kawana STP, QLD	2012/6442		Completed
Double Jump Road Residential Estate Development	2024/09825		Assessment
ENEOS Direct Methylcyclohexane Facility, Bulwer Island	2023/09712		Completed
Eurimbula Solar Farm	2024/09802		Assessment
Forest Springs - Commercial and residential development	2021/9135		Post-Approval
Gateway Motorway (Bracken Ridge to Pine River) Upgrade	2024/09800		Assessment
Gladstone - Fitzroy Pipeline	2007/3501		Post-Approval
Griffin Sports Complex	2022/09414		Completed
Hawaiki Nui Submarine Cable - Marine Route Survey and Cable Installation	2024/09814		Completed
Hughes Road Battery Energy Storage System	2024/09892		Assessment
Intersection Upgrades Project	2022/09277		Completed
Kerkins Levee Rehabilitation Project, Phases 2-8	2004/1435		Completed
Kings Forest Residential Development	2012/6328		Post-Approval
Low impact industrial development and associated infrastructure, Old Pacific Highway, Coomera	2013/6819		Completed
Manufactured Housing Estate	2022/09340		Assessment
Mara Assessment Officer Training - July	2024/09940		Referral Decision

Title of referral	Reference	Referral Outcome	Assessment Status
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed
Narangba College Campus Construction	2024/09864		Assessment
North Harbour Marina Extension	2021/9007		Completed
Over 50s Lifestyle Community Development, Serpentine Creek Road	2021/9052		Post-Approval
Port of Brisbane Channel Enhancement Project	2024/09919		Assessment
Powerlink Gladstone to Larcom Creek 275kV Transmission Line	2003/1229		Completed
Renewable Diesel and Sustainable Aviation Fuel Project	2022/09369		Completed
residential development - stages 1-5, Lot 1 on SP 118587, Cooloola Cove	2004/1568		Completed
Residential subdivision, Nyes Crescent	2002/772		Completed
Sandhills Stormwater Management Systems Project	2024/09784		Completed
Shelly to Moffat Beach Coastal Study	2023/09578		Completed
Stage 1 Coomera Connector	2020/8646		Post-Approval
Toondah Harbour Development, Moreton Bay, Qld	2018/8225		Completed
Twin Waters West Masterplanned Community	2024/09942		Completed
West Ballina Service Centre Development	2024/09977		Completed
White Patch Esplanade Upgrade Project	2022/09433		Post-Approval
Action clearly unacceptable			
Turtlecove Haven Retirement Village 2, Qld	2021/8930	Action Clearly Unacceptable	Completed
Controlled action			
Aluminium Smelter Expansion.	2001/477	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Banksia Beach Water Treatment Plant	2007/3396	Controlled Action	Post-Approval
Blackwater to Gladstone Gas Pipeline Project	2011/6034	Controlled Action	Completed
Borefield and new Pipeline, NSI WTP	2007/3400	Controlled Action	Completed
Bridge Construction Connecting Mainland & Curtis Island	2008/4400	Controlled Action	Completed
Brisbane Airport New Parallel Runway Project	2005/2095	Controlled Action	Post-Approval
Bruce Highway upgrade Caloundra to Sunshine Motorway Project no: 280/10A/1	2015/7464	Controlled Action	Post-Approval
Chancellor Park Estate Development	2002/670	Controlled Action	Completed
Clarence Valley and Coffs Harbour Regional Water Supply Project	2005/2191	Controlled Action	Post-Approval
Clearing of vegetation for the Gainsborough Greens residential subdivision	2013/6751	Controlled Action	Post-Approval
Clinton Vessel Interaction Project - Clinton Widening, Qld	2017/7976	Controlled Action	Post-Approval
Cobaki Lakes Residential Development	2010/5296	Controlled Action	Post-Approval
Construct and operate 447km high pressure gas transmission pipeline	2009/4976	Controlled Action	Post-Approval
Construction of a Chlor-Alkali/Ethylene Di-Chlorid	2003/922	Controlled Action	Completed
Construction of a Chlor-Alkali-Ethylene Di-Chloride (CA/EDC) Plant at the Gladst	2002/764	Controlled Action	Completed
Construction of a high pressure buried gas pipeline, Kogan to Gladstone, QLD	2009/5029	Controlled Action	Post-Approval
Construction of Bridge and Road to Access Proposed Natural Gas Liquification Park	2008/4060	Controlled Action	Completed
Construction of dual-track electrified railway lines	2002/586	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Contruction of residential tourism and marina development	2009/4993	Controlled Action	Completed
Coolum Ridges subdivision and development - southern	2002/817	Controlled Action	Post-Approval
Coomera Woods master planned residential development, Qld	2015/7610	Controlled Action	Completed
Development, Construction and Decommissioning of LNG Plant and Onshore Faciliti	2008/4402	Controlled Action	Post-Approval
Development of a Natural Gas Liquefaction Park	2008/4057	Controlled Action	Post-Approval
Development of a Public Light Rail and Bus Rapid Transit System	2008/4278	Controlled Action	Completed
Development of buildings, roads and services for a 142 lot residential developme	2004/1709	Controlled Action	Post-Approval
Development of marine facilities to service natural gas liquefaction park	2008/4058	Controlled Action	Post-Approval
Development of the Turtle Cove Haven retirement Village and golf course, Qld	2013/7038	Controlled Action	Completed
Development of the Yarwun Coal Terminal	2012/6348	Controlled Action	Completed
Donnybrook Sand Extraction Operation	2001/329	Controlled Action	Post-Approval
Establishment of Pearl Oyster Growout Facilities	2003/1106	Controlled Action	Post-Approval
Extension of sand mining operation into ML 1108 (Vance Lease)	2007/3464	Controlled Action	Post-Approval
Forest Wind	2020/8636	Controlled Action	Further Information Request
Fraser Straits Marina	2008/4633	Controlled Action	Post-Approval
Gas Pipeline with Alternative Pipleine to Supply Natural Gas Liquefaction Park	2008/4096	Controlled Action	Post-Approval
Gladstone New Fuels Development Project - stage 2A	2014/7241	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Gold Coast Airport Southern Development Area Expansion, Gold Coast, QLD	2014/7266	Controlled Action	Post-Approval
Gold Coast Marine Development	2005/2404	Controlled Action	Completed
Golden Beach, Beach Nourishment and Dredging Works, QLD	2012/6397	Controlled Action	Post-Approval
H2-Hub??? Gladstone - Export-class Green Hydrogen and Ammonia Complex	2021/9049	Controlled Action	Referral Decision
Happy Valley Hostel Accommodation Redevelopment	2002/633	Controlled Action	Completed
Harvest Estate, West Byron Urban Release Area, Ewingsdale Road, Byron Bay, NSW	2018/8166	Controlled Action	Post-Approval
Horizon Shores Marina redevelopment	2006/3028	Controlled Action	Post-Approval
HPAL Nickel Plant	2005/2376	Controlled Action	Post-Approval
Hummock Hill Island Development	2005/2502	Controlled Action	Completed
install & operate gas pipeline	2005/2059	Controlled Action	Post-Approval
Installation of three swing moorings in Byron Bay	2002/717	Controlled Action	Completed
Jacobs Well Airport	2004/1361	Controlled Action	Completed
Jacobs Well Airport Project	2003/947	Controlled Action	Completed
Landscape Habitat Construction	2001/250	Controlled Action	Completed
LNG Plant and Ancillary onshore and marine facilities	2009/4977	Controlled Action	Post-Approval
Lower Fitzroy River Infrastructure Project	2009/5173	Controlled Action	Post-Approval
Moreton Bay Port Expansion	2000/25	Controlled Action	Post-Approval
Multi-Modal Transport Corridor - construction of arterial road and railway, upg	2008/4361	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Nambucca Crescent residential subdivision Pimpama, QLD	2014/7190	Controlled Action	Post-Approval
Newport Waterways estate Stages 23 to 26	2002/639	Controlled Action	Completed
Nickel and cobalt laterite mine, High-pressure acid leach plant, slurry pipeline	2005/2257	Controlled Action	Completed
Northeast Business Park	2006/2912	Controlled Action	Post-Approval
North Harbour - Waterways and Waterfront Residential	2021/9090	Controlled Action	Assessment Approach
Oyster Aquaculture Development	2001/522	Controlled Action	Completed
Oyster farming	2002/664	Controlled Action	Completed
Pacificus Tourism Project	2012/6643	Controlled Action	Post-Approval
Pearl Oyster Growout Aquaculture	2002/800	Controlled Action	Completed
Peregian Springs Residential Development	2001/164	Controlled Action	Post-Approval
Peregian Springs Residential Development - Emu Mountain Site	2001/165	Controlled Action	Post-Approval
Pimpama Wastewater Treatment Plant, Recycled Water	2007/3407	Controlled Action	Post-Approval
Port of Gladstone Gatcombe & Golding Cutting Channel Duplication Project	2012/6558	Controlled Action	Post-Approval
Port of Gladstone Western Basin Strategic Dredging and Disposal Project	2009/4904	Controlled Action	Post-Approval
Queensland Curtis LNG Project - Curtis Island Road	2008/4404	Controlled Action	Completed
Queensland Curtis LNG Project - LNG Marine Facilities	2008/4401	Controlled Action	Post-Approval
Queensland Curtis LNG Project - Mainland Road and Bridge Approach	2008/4403	Controlled Action	Completed
Queensland Curtis LNG Project - Pipeline Network	2008/4399	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Queensland Curtis LNG Project - Swing Basin and Channel Dredging	2008/4406	Controlled Action	Completed
Recreational Go-Kart Track, Woongoolba	2021/8976	Controlled Action	Further Information Request
Redevelopment of existing unused Prawn Farm for farming Black Tiger Prawns	2002/660	Controlled Action	Post-Approval
residential and retirement village development	2005/2084	Controlled Action	Completed
Residential Development at Pacific Pines Estate, Lennox Heads	2007/3585	Controlled Action	Post-Approval
Residential development of Lot 3 RP 35335, Doolong Road South	2004/1624	Controlled Action	Post-Approval
residential development Rawson Street, Boonooroo	2006/2919	Controlled Action	Completed
Residential Subdivision, Lot 2 on RP171875, Samarai Drive	2006/3190	Controlled Action	Post-Approval
Residential subdivision of Lot 3 RP 185332	2006/3135	Controlled Action	Post-Approval
Restoration & rehabilitation of sections of the Maryborough to Cooloola Road	2012/6297	Controlled Action	Post-Approval
Sale of Airservices Australia Property	2009/4899	Controlled Action	Post-Approval
Sandgate Waste Water Treatment Plant Augmentation Works	2001/262	Controlled Action	Post-Approval
Seacage Snapper Farming	2001/318	Controlled Action	Completed
Section 2 Yamba Bypass, NSW	2013/6928	Controlled Action	Completed
Selective land clearing and development of buildings, roads and services for ...	2004/1710	Controlled Action	Completed
Shipping Activities Associated with the QLD Curtis LNG Project	2008/4405	Controlled Action	Post-Approval
Shopping Centre Development, Kingscliff	2005/1937	Controlled Action	Completed
Shoreline urban village development, Redland Bay, Qld	2016/7776	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Southern Redland Bay Wastewater Treatment Plant	2020/8849	Controlled Action	Post-Approval
Stage 1 Tugan Bypass	2002/883	Controlled Action	Completed
Staged commercial, industrial and residential development	2002/715	Controlled Action	Completed
Steritech Gamma Sterilisation and Decontamination Plant, Narangba Industrial Est	2000/101	Controlled Action	Post-Approval
Stewart Island Eco-Village	2006/2993	Controlled Action	Completed
Sub-tidal oyster farm	2001/523	Controlled Action	Completed
Sunshine Coast Airport Master Plan Implementation Project	2011/5823	Controlled Action	Post-Approval
Talisman Saber 2005 Military Exercise	2004/1819	Controlled Action	Post-Approval
The Arrow Gas Transmission Pipeline, Gladstone to Curtis Island	2009/5008	Controlled Action	Post-Approval
The Arrow LNG Facility, Curtis Island, Gladstone	2009/5007	Controlled Action	Post-Approval
The Trails Residential Development	2021/9047	Controlled Action	Further Information Request
Toondah Harbour Development	2017/7939	Controlled Action	Referral Decision
Tugun Bypass	2004/1861	Controlled Action	Post-Approval
Tugun Bypass Four-lane Dual Motorway	2003/1122	Controlled Action	Completed
TURTLECOVE RETIREMENT VILLAGE 3	2021/9054	Controlled Action	Further Information Request
Turtle Sands Caravan Park Redevelopment, Bundaberg, Qld	2018/8385	Controlled Action	Post-Approval
Turtle Street Beach Resort, Curtis Island, Qld	2015/7585	Controlled Action	Post-Approval
Upgrade of the Smith Street Motorway eastbound lanes and interchange with Labrador-	2012/6423	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Carrara Rd			
Upgrading the Pacific Highway - Woolgoolga to Ballina Upgrade, NSW	2012/6394	Controlled Action	Post-Approval
Urban Subdivision, 1-7 Dixon Road, Buderim.	2001/447	Controlled Action	Completed
vegetation clearance	2003/1165	Controlled Action	Completed
Wiggins Island Coal Terminal	2005/2374	Controlled Action	Post-Approval
Not controlled action			
'The Sands' Development, Tannum Sands	2012/6554	Not Controlled Action	Completed
25km upgrade of the Pacific Highway	2007/3910	Not Controlled Action	Completed
56 Lot Industrial subdivision and associated infrastructure construction activities adjacent to Hays	2004/1553	Not Controlled Action	Completed
Addition of growout ponds and settlement ponds	2002/661	Not Controlled Action	Completed
Advanced Water Treatment Plant, Gibson Island	2007/3215	Not Controlled Action	Completed
Agnes Water Desalination Plant	2006/3036	Not Controlled Action	Completed
Aquaculture Sea Ranching of Sea Cucumber (Beche de Mere), Shark Bay, Tinnanbar, Qld	2014/7236	Not Controlled Action	Completed
Aquaculture Sea Ranching of Sea Cucumbers, QLD	2012/6567	Not Controlled Action	Completed
Augmentation of the Roy Rufus Artificial Reef, Hervey Bay	2006/3182	Not Controlled Action	Completed
Aura Precinct 2 Telecommunications Facility, Caloundra West, Qld	2016/7834	Not Controlled Action	Completed
Australia TradeCoast Sewerage Pipeline	2001/270	Not Controlled Action	Completed
Banora Point Pacific Highway Upgrade	2008/4047	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Bellvista II Mixed Use Residential Development	2010/5428	Not Controlled Action	Completed
Boat Ramp and Slipway Construction	2001/507	Not Controlled Action	Completed
Bongaree Seawall Renewal Project	2012/6688	Not Controlled Action	Completed
Bonogin Subdivision	2001/264	Not Controlled Action	Completed
Boyd St Overpass	2006/3094	Not Controlled Action	Completed
Bundaberg Ring Road	2005/2384	Not Controlled Action	Completed
Burnby Road Residential Subdivision, Hemmant, Queensland	2020/8694	Not Controlled Action	Completed
Burpengary East Sewage Treatment Plant Outfall	2012/6352	Not Controlled Action	Completed
Byron Shire Council Sewage Treatment Plant Upgrade	2000/48	Not Controlled Action	Completed
Calcining Plant	2001/193	Not Controlled Action	Completed
Caloundra Regional Business and Industrial Park development and associated infrastructure	2006/3102	Not Controlled Action	Completed
Caloundra Road Duplication	2005/2351	Not Controlled Action	Completed
Caltex Lateral Pipeline, 5.4km underground gas pipeline construction	2009/5196	Not Controlled Action	Completed
Cannon Hill Community Links Project	2005/2358	Not Controlled Action	Completed
Clay Gully Road residential development, Victoria Point, QLD	2017/7984	Not Controlled Action	Completed
Clearance of approx 152ha of open forest vegetation for residential development at Mt Cotton Villag	2004/1592	Not Controlled Action	Completed
Clearing of vegetaion for a residential subdivision on Karingal Drive, Pimpama, QLD	2013/6716	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Coastal Pathway linking Tripcony Lane to Leach Park and Park Place via a boardwalk	2010/5551	Not Controlled Action	Completed
Coles property Development Sippy Downs Town Center	2012/6488	Not Controlled Action	Completed
Coles Property Development Sippy Downs Town Centre	2012/6371	Not Controlled Action	Completed
Community Title Residential Subdivision, 22km North of Coffs Harbour	2006/2970	Not Controlled Action	Completed
Concrete Batching plant	2003/1245	Not Controlled Action	Completed
Construction of a 1500 metre sewer rising main	2010/5624	Not Controlled Action	Completed
construction of a building to be used to sell tickets for the barge operation	2003/983	Not Controlled Action	Completed
Construction of a Dual Occupancy Dwelling on a Residential Allotment	2009/4955	Not Controlled Action	Completed
Construction of a high-capacity fibre optic submarine cable	2006/2914	Not Controlled Action	Completed
Construction of a new Arts and Tourism Centre	2003/1098	Not Controlled Action	Completed
Construction of a portable water pipeline and a sewer pressure main	2010/5646	Not Controlled Action	Completed
Construction of Calliope River 275kV and 132kV Bulk Supply Substation	2009/5229	Not Controlled Action	Completed
Construction of public access road and open drain to service Nudgee Landfill rem	2004/1486	Not Controlled Action	Completed
Construction of Sewerage Pipeline	2009/4868	Not Controlled Action	Completed
construction of two sports fields, car park, amenities block and access road fro	2004/1376	Not Controlled Action	Completed
Coochin aquaculture farm, Roys Rd, Coochin Creek	2003/921	Not Controlled Action	Completed
Cooloola Great Walk Ecotourism Project, QLD	2021/8954	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Coolum Industrial Estate	2005/2162	Not Controlled Action	Completed
Coolum Ridges subdivision and development - northern	2002/818	Not Controlled Action	Completed
Coombabah Wastewater Treatment Plant additional pipeline	2007/3366	Not Controlled Action	Completed
Coomera Waters Phase 2	2003/941	Not Controlled Action	Completed
Coomera Woods Protection Zone, 49 George Alexander Way, Coomera Qld	2018/8214	Not Controlled Action	Completed
Crude and Bunker Pipelines from Fisherman Islands to the Caltex Refinery, Lytton	2004/1743	Not Controlled Action	Completed
CURA A Residential Development, Cumbalum Heights, NSW	2018/8336	Not Controlled Action	Completed
Cypress Central Development, Clear Island Waters QLD	2012/6436	Not Controlled Action	Completed
Davenport Drive Fishing Platform	2010/5460	Not Controlled Action	Completed
Demolition and construction of a dwelling	2011/6155	Not Controlled Action	Completed
Development of a school on Manly Road, Manly West	2003/948	Not Controlled Action	Completed
development of a single storey house for residential purposes	2012/6302	Not Controlled Action	Completed
Development of a wharf and cruise ship facility, Luggage Point, Pinkenba, Qld	2016/7815	Not Controlled Action	Completed
Development of eco-tourism visitor accommodation	2004/1879	Not Controlled Action	Completed
Development of Leisure Life Retirement Community	2004/1746	Not Controlled Action	Completed
Development of residential community at Lawnton Pocket Road	2004/1571	Not Controlled Action	Completed
Development of residential units	2007/3607	Not Controlled Action	Completed
Development of Stage 7 of the North Shore Coastal Village	2004/1907	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Development of the Heritage Park Sporting Precinct, Rifle Range Road, Pimpama, Qld	2016/7831	Not Controlled Action	Completed
Development of the Pimpama Junction Shopping Centre Precinct	2013/6772	Not Controlled Action	Completed
Dohles Rocks residential subdivision and development	2004/1494	Not Controlled Action	Completed
Duckholes Creek Flood Mitigation Project	2001/159	Not Controlled Action	Completed
Eddie Santagiuliana Bike and Boardwalk Trail Construction	2008/4183	Not Controlled Action	Completed
Eddie Santagiuliana Way Boardwalk	2005/2049	Not Controlled Action	Completed
Eprapah Heights Bushland Residential Subdivision	2001/286	Not Controlled Action	Completed
establishment of a car wash and service station facility on Lot 12 RP 57455	2005/2077	Not Controlled Action	Completed
Establishment of trial oyster and pearl farm	2004/1774	Not Controlled Action	Completed
Expansion and dredging at existing RG Tanna Coal Terminal	2004/1619	Not Controlled Action	Completed
Expansion of Red Mud storage facility	2006/2928	Not Controlled Action	Completed
Expansion of sewage treatment capacity	2005/1943	Not Controlled Action	Completed
Extension of existing hard rock quarry	2004/1713	Not Controlled Action	Completed
Extension of R G Tanna Coal Wharf	2000/54	Not Controlled Action	Completed
Ferry Car Park and Boat Ramp Facility Extension	2010/5466	Not Controlled Action	Completed
First Avenue Stormwater Discharge Improvement	2002/604	Not Controlled Action	Completed
Fisherman's Landing Port Facility	2000/124	Not Controlled Action	Completed
Fishermans Landing site conversion for Lime Kiln	2002/740	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Flinders Parade - Arthur Davies Park upgrade works	2006/3076	Not Controlled Action	Completed
Fraser Waters South Integrated Residential, Commercial and Tourist Development	2005/2204	Not Controlled Action	Completed
Future Foreshore Development Stage 3 - residential, tourism & marina development	2005/2035	Not Controlled Action	Completed
Gateway Motorway Upgrade	2003/1297	Not Controlled Action	Completed
Gateway Upgrade North (GUN) Project, Southeast Qld	2013/7066	Not Controlled Action	Completed
GCCC Northern Wastewater Strategy and associated Reclaimed Water Scheme - Stage	2001/282	Not Controlled Action	Completed
Gladstone Energy and Ammonia Project, Qld	2018/8305	Not Controlled Action	Completed
Gladstone State Development Area, Ammonia Production Facility	2006/2855	Not Controlled Action	Completed
Gold Coast Airport Instrument Landing Project, Qld	2015/7428	Not Controlled Action	Completed
Gold Coast Light Rail Stage 2, Qld	2015/7575	Not Controlled Action	Completed
Golden Beach boardwalk	2002/860	Not Controlled Action	Completed
Gordon Road Residential Development	2002/854	Not Controlled Action	Completed
Hanson Tweed Sand Plant Expansion	2021/9095	Not Controlled Action	Completed
Happy Valley Resort Redevelopment	2002/588	Not Controlled Action	Completed
Hideaway Currumbin Residential development	2005/2136	Not Controlled Action	Completed
Houghton Highway Bridge Duplication	2007/3680	Not Controlled Action	Completed
Hutley Drive Extension	2010/5408	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			
Industrial development	2005/2319	Not Controlled Action	Completed
Infilling of the Lucinda Drive stormwater retention pond	2012/6623	Not Controlled Action	Completed
Installation of a sewer rising main and replacement of the existing PVC rising m	2005/2058	Not Controlled Action	Completed
Installation of Sydney-Guam Submarine Cable	2007/3848	Not Controlled Action	Completed
Integrated Employment and Residential Community	2007/3449	Not Controlled Action	Completed
Isles of Newport Residential Development	2007/3316	Not Controlled Action	Completed
Japan-Guam-Australia Sunshine Coast Branch Marine Cable Route Survey (JGA) QLD	2018/8373	Not Controlled Action	Completed
JGA Submarine Cable, Sunshine Coast, Qld	2019/8502	Not Controlled Action	Completed
Kakadu Beach high tide shore bird roost maintenance, Bribie Island, QLD	2014/7181	Not Controlled Action	Completed
Kawana Arterial Extension, Qld	2013/7067	Not Controlled Action	Completed
Koala Beach Estate -Stage 7	2003/1306	Not Controlled Action	Completed
Koala Beach Estate Stages 5 & 6	2003/961	Not Controlled Action	Completed
Koala Beach Residential Estate - Stages 3 & 4	2001/465	Not Controlled Action	Completed
Kooringal Public Toilets	2002/819	Not Controlled Action	Completed
Landscape Upgrade in Frank Doyle Park	2007/3250	Not Controlled Action	Completed
Liquefied Natural Gas Export Terminal	2008/3954	Not Controlled Action	Completed
Long Term Recycled Water Release Program, Gold Coast, Qld	2018/8328	Not Controlled Action	Completed
Lord Howe Rise Marine Seismic Survey	2015/7623	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Lot 135 RP814007 Residential Development & Construction of Artificial Water Bodi	2003/1160	Not Controlled Action	Completed
Luggage Point to Goodna Pipeline Alignment	2007/3358	Not Controlled Action	Completed
Luggage Pt WWTP grass swale upgrade	2003/1124	Not Controlled Action	Completed
Lytton Fuels Refinery Modification	2003/1234	Not Controlled Action	Completed
Maroochydore Rd Upgrade Bruce Hwy to Kunda Park	2005/2207	Not Controlled Action	Completed
MMTC between Caloundra Rd & Creekside Blvd	2004/1918	Not Controlled Action	Completed
Moora Park and Wynnum Central Park foreshore upgrades	2006/2916	Not Controlled Action	Completed
Moore Park Beach Residential Development, QLD	2014/7234	Not Controlled Action	Completed
Moreton Bay Cycleway - Hilliards Creek Crossing, QLD	2012/6510	Not Controlled Action	Completed
Moreton Bay Rail Link between Petrie Station and Kippa Ring (Redcliffe)	2010/5589	Not Controlled Action	Completed
Moreton Bay Regional Council/Natural resources management/Lot 4 Esplanade Toorbul QLD 4510/QLD/Maint	2014/7188	Not Controlled Action	Completed
Moura Link - Aldoga Rail Project	2007/3773	Not Controlled Action	Completed
Murdoch's Road Drainage Works, QLD	2012/6569	Not Controlled Action	Completed
Newport Waterways estate Stage 22	2002/584	Not Controlled Action	Completed
New two lane distributor road link and interchange	2011/5813	Not Controlled Action	Completed
Noosa Civic Centre expansion, Lot 3, 28 Eeinie Creek Road, Noosaville, Qld	2015/7450	Not Controlled Action	Completed
North Byron Parkland Cultural Events, NSW	2017/7973	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Northern Link Parallel Road Tunnels Project	2007/3824	Not Controlled Action	Completed
Northern Pipeline Interconnector	2007/3359	Not Controlled Action	Completed
North Lake and South Lake Residential Precincts, Pelican Waters	2002/640	Not Controlled Action	Completed
North West Channel Trial Dredging Project, Qld	2012/6692	Not Controlled Action	Completed
Obstacle Limitation Surface Clearing, Sunshine Coast Airport, QLD	2019/8462	Not Controlled Action	Completed
Orchard Beach residential subdivision	2002/603	Not Controlled Action	Completed
Orchid transplant	2003/1113	Not Controlled Action	Completed
Pacific Harbour Project	2000/53	Not Controlled Action	Completed
Papillon Villas Residential Estate Expansion, Lang Street, Point Arkwright	2004/1736	Not Controlled Action	Completed
Pelican Waters Golf Club Lakes Edge redevelopment, Mahogany Drive, Pelican Waters, Qld	2015/7629	Not Controlled Action	Completed
Phase 1 of the Kerkin Levee Rehabilitation Project - Construction of a new levee	2003/936	Not Controlled Action	Completed
Pimpama School, Coomera, Qld	2018/8252	Not Controlled Action	Completed
Point Lookout Headland Master Plan	2001/485	Not Controlled Action	Completed
Point Lookout Tourist Resort	2003/1183	Not Controlled Action	Completed
Point Lookout wastewater treatment plant upgrade, North Stradbroke Island, QLD	2015/7430	Not Controlled Action	Completed
Pole home construction, Lots 91 & 92 Fauna Tce	2006/2555	Not Controlled Action	Completed
Port of Brisbane Second Swing Basin, Qld	2017/8073	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Prawn Aquaculture Enterprise Expansion	2001/294	Not Controlled Action	Completed
Prawn Aquaculture Expansion	2001/322	Not Controlled Action	Completed
Prawn Aquaculture Facility	2001/443	Not Controlled Action	Completed
Project Sun Liquefied Natural Gas Plant and Pipeline	2008/3994	Not Controlled Action	Completed
Proposed biomass fuel stockpile	2001/514	Not Controlled Action	Completed
Proposed Residential Subidivision, Mudjimba Beach Road and Nojoor Road, Mudjimba	2002/749	Not Controlled Action	Completed
Proposed Retirement Facility, 48-86 Galleon Way, Currumbin Waters	2020/8814	Not Controlled Action	Completed
Queen Street Residential Development	2001/132	Not Controlled Action	Completed
Rainbow Shores Stage 2 Residential Development	2006/3139	Not Controlled Action	Completed
Reconfiguration of a Lot (subdivide on into two)	2010/5667	Not Controlled Action	Completed
recreational improvements at Manly, Wynnum & Sandgate	2005/2488	Not Controlled Action	Completed
Redevelopment of Tripcony and Hibiscus Caravan Park, 146 Bilcock Street	2009/5056	Not Controlled Action	Completed
Rehabilitation of Dowse Lagoon, Sandgate	2004/1401	Not Controlled Action	Completed
Removal and transport of sand tailings from mining operations	2007/3843	Not Controlled Action	Completed
Replacement of existing composting toilets at the Boondall Interpretive Centre	2003/1140	Not Controlled Action	Completed
Replacement of Existing Processing Plant with a smaller Technology Demonstration Plant	2009/5064	Not Controlled Action	Completed
replacemnet of the existing sewage treatment plant and bunding of 14ha of woodl	2005/1945	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Residential development, Big Sky Estate (Stages 5-8), Coomera	2015/7535	Not Controlled Action	Completed
Residential Development, Morris Road	2006/2661	Not Controlled Action	Completed
Residential Development and Associated Infrastructure	2009/5166	Not Controlled Action	Completed
Residential Development Stages 4 & 9-10 Big Sky Estate, Coomera, QLD	2014/7192	Not Controlled Action	Completed
Residential dwelling, 26 Shelley Drive	2004/1362	Not Controlled Action	Completed
Residential estate Bunker Rd	2005/2130	Not Controlled Action	Completed
residential subdivision	2002/851	Not Controlled Action	Completed
Residential subdivision, 152 Yawalpah Road, Pimpama, Qld	2013/6914	Not Controlled Action	Completed
Residential subdivision, 54-64 Karingal Drive, Pimpama, Qld	2013/6739	Not Controlled Action	Completed
Residential Subdivision, Freshwater Development, Brays Road	2004/1606	Not Controlled Action	Completed
residential subdivision, park & infrastructure	2003/1216	Not Controlled Action	Completed
Residential subdivision, Redland Bay Road	2002/739	Not Controlled Action	Completed
Residential subdivision for 79 townhouses	2008/4187	Not Controlled Action	Completed
Residential Subdivision on Lot 4 Stewart Island	2005/2068	Not Controlled Action	Completed
Residential Viewing Corridor Overlooking Moreton Bay	2007/3775	Not Controlled Action	Completed
Retirement Village and Residential Aged Care, Sunrise Beach	2021/9059	Not Controlled Action	Completed
RG Tanna Coal Terminal Expansion	2004/1906	Not Controlled Action	Completed
Rifle Range Creek Pathway & Bridge, Woongarra Scenic Drive, Bargara, QLD	2012/6467	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Riverstone Rise residential, commercial & industrial development, Benaraby, Qld	2013/6857	Not Controlled Action	Completed
Robina to Varsity Lakes rail extension	2006/3074	Not Controlled Action	Completed
Roma to Brisbane Gas Transmission Pipeline Metropolitan Loop	2012/6660	Not Controlled Action	Completed
Russell Island Child Care Centre	2011/5881	Not Controlled Action	Completed
Salty Lagoon Rehabilitation	2010/5716	Not Controlled Action	Completed
Sea cucumber grow-out area	2007/3355	Not Controlled Action	Completed
Sea Ranch Site Development	2010/5323	Not Controlled Action	Completed
Seismic Data Survey for GA Oil Exploration Program, Capel and Faust Basins (700k	2006/2844	Not Controlled Action	Completed
Settlers Cove resort development, Noosa Heads, Qld	2013/6834	Not Controlled Action	Completed
Sewage Treatment Plant Upgrade	2005/1944	Not Controlled Action	Completed
Singapore Airlines Flight College Accommodation	2007/3380	Not Controlled Action	Completed
Site preparation for residential dwelling, Lot 79, Gregory Road	2004/1499	Not Controlled Action	Completed
South Stradbroke Island Bypassing Project	2019/8515	Not Controlled Action	Completed
Spitfire Channel Dredging	2005/2247	Not Controlled Action	Completed
Stage 4 Future Foreshore Development infill of intertidal land	2007/3419	Not Controlled Action	Completed
Stormwater drainage construction and associated infrastructure	2002/550	Not Controlled Action	Completed
Subdivision development	2002/583	Not Controlled Action	Completed
Suncoast 132kV Power Project - Palmwoods to Pacific Paradise	2013/6715	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Sunshine Motorway Duplication	2011/6001	Not Controlled Action	Completed
Sunshine Motorway Duplication between David Low Way and Pacific Paradise	2007/3292	Not Controlled Action	Completed
Sunshine Motorway duplication between Kawana Way and Sippy Downs Drive	2004/1908	Not Controlled Action	Completed
Surfers Paradise SLSC North Branch Public Precinct, Qld	2017/8056	Not Controlled Action	Completed
Tallowood Cemetery expansion, Deception Bay, Qld	2014/7339	Not Controlled Action	Completed
Telecommunications Facility, Kingfisher Bay Resort	2004/1873	Not Controlled Action	Completed
The Glades residential & mixed use development, Wondunna, QLD	2014/7293	Not Controlled Action	Completed
The North-South Bypass Tunnel (NSBT)	2004/1741	Not Controlled Action	Completed
Thornlands Road Residential Units	2002/850	Not Controlled Action	Completed
Toorbul Foreshore Wader Roost Enhancement	2004/1349	Not Controlled Action	Completed
Tourist resort and public recreation area	2002/805	Not Controlled Action	Completed
TradeCoast to Belmont Transmission Line	2003/1164	Not Controlled Action	Completed
Transport corridor connecting Stringybark and Dixon Roads	2008/4607	Not Controlled Action	Completed
Tree clearing Lagoon Road, Fingal Head, NSW	2014/7383	Not Controlled Action	Completed
Undertake major residential development to construct 2018 Commonwealth Games Village, Southport, QLD	2013/6953	Not Controlled Action	Completed
Upgraded sewerage infrastructure in the Helensvale/Coombabah catchment	2004/1427	Not Controlled Action	Completed
Upgrade into four lane, 90km/hr, 9.6km long motorway	2010/5600	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
upgrade mobile facility at Orchid Beach	2003/1268	Not Controlled Action	Completed
Urangan Boat Harbour - Dredged Material Disposal	2001/155	Not Controlled Action	Completed
Urban Subdivision	2001/493	Not Controlled Action	Completed
Vegetation Clearing	2011/5957	Not Controlled Action	Completed
vegetation clearing /residential development on Lot 5/SP149935 and Lot 39/RP 848	2004/1920	Not Controlled Action	Completed
Vegetation clearing for a residential development at 109 Amity Road, Coomera	2013/6821	Not Controlled Action	Completed
Vegetation clearing for the Gainsborough Park Residential Estate	2012/6667	Not Controlled Action	Completed
Vegtation clearing for a residential development at 100 Amity Road, Coomera	2013/6797	Not Controlled Action	Completed
Western Corridor Recycled Water Project	2006/3202	Not Controlled Action	Completed
Widening and realignment of Rainbow Beach Road	2004/1844	Not Controlled Action	Completed
Widening and Rehabilitation of the Maryborough to Caloola Road, Fraser Coast, Q	2010/5771	Not Controlled Action	Completed
Wild Harvest Surf Clam Development works within the Black Swamp	2005/2334	Not Controlled Action	Completed
Wynnum Esplanade and Rose Bay Landscaping upgrade	2006/3134	Not Controlled Action	Completed
Wynnum Wastewater Treatment Plant	2005/2123	Not Controlled Action	Completed
Not controlled action (particular manner)			
'The Atrium' multi-unit residential development	2008/4243	Not Controlled Action (Particular Manner)	Post-Approval
19 lot residential subdivision in the township of Boonooroo	2010/5627	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		(Particular Manner)	
2011 World Water Ski Racing Championship	2010/5596	Not Controlled Action (Particular Manner)	Post-Approval
Aquaculture Production Facility	2002/824	Not Controlled Action (Particular Manner)	Post-Approval
Beachmere sand mining extension project, Qld	2015/7419	Not Controlled Action (Particular Manner)	Post-Approval
Beach nourishment works on coastline	2012/6346	Not Controlled Action (Particular Manner)	Post-Approval
Behavioural Response of Australian Humpback Whales to Seismic Surveys	2011/6065	Not Controlled Action (Particular Manner)	Post-Approval
Buderim Springs mixed use residential development	2003/1128	Not Controlled Action (Particular Manner)	Post-Approval
Bulcock Beach and Esplanade Redevelopment	2008/4186	Not Controlled Action (Particular Manner)	Post-Approval
Byron Bay Town Centre Bypass	2019/8562	Not Controlled Action (Particular Manner)	Post-Approval
Byron Shire Bioenergy Facility	2021/8969	Not Controlled Action (Particular Manner)	Post-Approval
Construction and Operation of Desalination Plant	2006/2973	Not Controlled Action (Particular Manner)	Post-Approval
Cooloola Sands Residential Subdivision	2007/3253	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Coolum Ridges Southern Interchange, Qld	2015/7598	Not Controlled Action (Particular Manner)	Post-Approval
Cultural Events Site at Yelgun, NSW	2012/6475	Not Controlled Action (Particular Manner)	Post-Approval
Curtis Island Water & Sewerage Facilities Project Seismic Survey	2010/5735	Not Controlled Action (Particular Manner)	Post-Approval
Development of 99 residential allotments and associated roadways and services on	2004/1708	Not Controlled Action (Particular Manner)	Post-Approval
Development of a new 1.741km trunk sewer pipeline to service business and residential development	2011/5993	Not Controlled Action (Particular Manner)	Post-Approval
Duplication of approx 2km of Oxley Drive	2003/919	Not Controlled Action (Particular Manner)	Post-Approval
Duplication of the South Pine to Hays Inlet 110kV overhead power transmission li	2009/4870	Not Controlled Action (Particular Manner)	Post-Approval
Emergency dredging of Port of Bundaberg to pre 2013 flood clearance depth, QLD	2013/7006	Not Controlled Action (Particular Manner)	Post-Approval
Faust-Capel Basins & Gifford Guyot Seismic Survey	2007/3636	Not Controlled Action (Particular Manner)	Post-Approval
Gold Coast Coastal Protection Three Point Plan, QLD	2013/7103	Not Controlled Action (Particular Manner)	Post-Approval
Gold Coast Cruise Ship Terminal, Qld	2017/7899	Not Controlled Action (Particular Manner)	Post-Approval
Gold Coast Ocean Terminal, Bilinga, Qld	2012/6610	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Gold Coast Rapid Transit Project - Griffith University to Broadbeach	2009/5199	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
Installation of a telecommunications facility within the King Fisher Bay resort, Qld	2016/7803	Not Controlled Action (Particular Manner)	Post-Approval
International fibre optic submarine cable installation, between Sydney and Honiara, Solomon Islands	2015/7502	Not Controlled Action (Particular Manner)	Post-Approval
Jacobs Well Navigation Channel Dredging	2008/4662	Not Controlled Action (Particular Manner)	Post-Approval
Japan-Guam-Australia (JGA) Fibre Optic Cable project	2016/7795	Not Controlled Action (Particular Manner)	Post-Approval
Lord Howe Rise Marine Seismic and Sampling Survey	2017/8027	Not Controlled Action (Particular Manner)	Post-Approval
Maroochydore, Cotton Tree Foreshore and parts of Chambers Island Nourishment Works, Qld	2012/6396	Not Controlled Action (Particular Manner)	Post-Approval
Maroochy River Dredging Event 2016, Sunshine Coast, QLD	2015/7594	Not Controlled Action (Particular Manner)	Post-Approval
Mary River Navigation Channel	2007/3512	Not Controlled Action (Particular Manner)	Post-Approval
Moreton Bay Eco Resort	2007/3781	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Navigation Channel Dredging	2007/3547	Not Controlled Action (Particular Manner)	Post-Approval
Navy Mine Countermeasures Training	2002/812	Not Controlled Action (Particular Manner)	Post-Approval
Non-lethal dispersal of Flying Foxes in Cassia Wildlife Corridor, Queensland	2013/6909	Not Controlled Action (Particular Manner)	Post-Approval
Nudge Black and Grey-headed Flying-foxes away from residential properties, Lawn Terrace, Capalaba	2014/7273	Not Controlled Action (Particular Manner)	Post-Approval
Proposed Commercial Light Industry Sites and Transportable Home Park	2009/5209	Not Controlled Action (Particular Manner)	Post-Approval
Proposed Upgrade to 17km of the Pacific Highway	2009/5103	Not Controlled Action (Particular Manner)	Post-Approval
Redcliffe Offshore Superboat Race	2010/5595	Not Controlled Action (Particular Manner)	Post-Approval
Redcliffe Offshore Superboat Race	2012/6453	Not Controlled Action (Particular Manner)	Post-Approval
Redcliffe Offshore Superboat Race	2011/5851	Not Controlled Action (Particular Manner)	Post-Approval
Residential development, hotel & extension of Lake Serenity	2004/1863	Not Controlled Action (Particular Manner)	Post-Approval
Residential development, Kinsellas Road	2004/1849	Not Controlled Action (Particular Manner)	Post-Approval
Residential Development of Lot 1 located at 1977 Anzac Avenue, Mango Hill, QLD	2013/6858	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Residential subdivision and Equestrian Centre on Duncan Street	2006/3037	Not Controlled Action (Particular Manner)	Post-Approval
Retirement village, Fernbourne Rd	2006/2663	Not Controlled Action (Particular Manner)	Post-Approval
Staged Residential Subdivision of Lot 115 on RP154306 and Lot 4 on RP850609, Bea	2005/2093	Not Controlled Action (Particular Manner)	Post-Approval
Tepequar Drive Flying Fox Roost Dispersal Management, Maroochydore, Qld	2013/7007	Not Controlled Action (Particular Manner)	Post-Approval
Tourism Resort Development on Russell Island, Moreton Bay	2007/3933	Not Controlled Action (Particular Manner)	Post-Approval
Upgrade of Automatic Weather Stations	2010/5483	Not Controlled Action (Particular Manner)	Post-Approval
Vegetation Clearing for Airstrip Safety, Weed Removal and Erosion Mitigation Wor	2003/1283	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Bongaree Seawall Renewal Project, Qld	2012/6671	Referral Decision	Completed
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed
Caloundra South CAMCOS Realignment Study	2007/3726	Referral Decision	Completed
Cassia Wildife Corridor Flying-fox Roost Management	2013/6824	Referral Decision	Completed
Construction of a new runway at Sunshine Coast Airport	2011/6101	Referral Decision	Completed
Development of Sydney Rock Oyster nursery, Great Sandy Straits, QLD	2013/6948	Referral Decision	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
farming of Pearl Oysters	2004/1355	Referral Decision	Completed
Gas Transmission Pipeline to supply Natural Gas Liquefaction Park	2008/4061	Referral Decision	Completed
Glen Eden residential estate development, Glen Eden, Qld	2013/6925	Referral Decision	Completed
Gold Coast Dive Attraction Purpose-built Reef, QLD	2020/8770	Referral Decision	Completed
Jacobs Well Navigation Channel Dredging	2008/4164	Referral Decision	Completed
Mitchell Creek Road Reserve vehicle track, Rules Beach, QLD	2013/7072	Referral Decision	Completed
Mooloolah River interchange upgrade and extension project, Qld	2015/7567	Referral Decision	Completed
Moore Park Beach Residential Development	2009/5260	Referral Decision	Completed
North West Channel Trial - Channel Deepening Project	2012/6686	Referral Decision	Completed
Port of Gladstone Western Basin Strategic Dredging and Disposal Project	2009/4826	Referral Decision	Completed
Proposed Amendments to Gazetted Scheme of Develpment & Future Development Kingf	2010/5372	Referral Decision	Completed
Residential Development on Finnegan Way, Coomera, QLD	2012/6685	Referral Decision	Completed
Residential Estate Development, Bakers Flat Road, Beachmere, Qld	2013/6846	Referral Decision	Completed
Residential Subdivision (4 lots) in Redland Bay QLD	2007/3878	Referral Decision	Completed
Scallop enhancement project	2001/512	Referral Decision	Completed
Toondah Harbour Project, Moreton Bay, Qld	2015/7612	Referral Decision	Completed

Key Ecological Features [Resource Information]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Canyons on the eastern continental slope	Temperate east
Elizabeth and Middleton reefs	Temperate east
Lord Howe seamount chain	Temperate east
Shelf rocky reefs	Temperate east
Tasman Front and eddy field	Temperate east
Tasmantid seamount chain	Coral Sea
Tasmantid seamount chain	Temperate east
Upwelling off Fraser Island	Temperate east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Dolphins		
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Breeding	Known to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Foraging	Likely to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Known to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Internesting	Low density
Caretta caretta Loggerhead Turtle [1763]	Internesting	Likely to occur
Caretta caretta Loggerhead Turtle [1763]	Nesting	Low density
Caretta caretta Loggerhead Turtle [1763]	Nesting	High density

Scientific Name	Behaviour	Presence
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur
Chelonia mydas Green Turtle [1765]	Courtship	Likely to occur
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Internesting	Known to occur
Chelonia mydas Green Turtle [1765]	Internesting	Likely to occur
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur
Chelonia mydas Green Turtle [1765]	Nesting	High density
Dermochelys coriacea Leatherback Turtle [1768]	Internesting	Low density
Dermochelys coriacea Leatherback Turtle [1768]	Nesting	Low density
Natator depressus Flatback Turtle [59257]	Nesting	Low density
Seabirds		
Anous minutus Black Noddy [824]	Breeding	Known to occur
Anous minutus Black Noddy [824]	Foraging	Likely to occur
Anous stolidus Common Noddy [825]	Breeding	Known to occur
Anous stolidus Common Noddy [825]	Foraging	Likely to occur
Ardenna carneipes Flesh-footed Shearwater [82404]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Likely to occur
Fregetta grallaria grallaria White-bellied Storm Petrel [64438]	Foraging	Likely to occur
Gygis alba White Tern [807]	Foraging	Likely to occur
Macronectes giganteus Southern Giant Petrel [1060]	Foraging	Known to occur
Macronectes halli Northern Giant Petrel [1061]	Foraging	Known to occur
Oceanites oceanites Wilsons Storm Petrel [1034]	Migration	Known to occur
Onychoprion fuscata Sooty Tern [82847]	Breeding	Known to occur
Onychoprion fuscata Sooty Tern [82847]	Foraging	Likely to occur
Phaethon rubricauda Red-tailed Tropicbird [994]	Foraging	Likely to occur
Procellaria parkinsoni Black Petrel [1048]	Foraging	Likely to occur
Procelsterna cerulea Grey Ternlet [64378]	Foraging	Likely to occur
Pterodroma macroptera Great-winged Petrel [1035]	Foraging	Likely to occur
Pterodroma neglecta neglecta Kermadec Petrel [64450]	Foraging	Likely to occur
Pterodroma nigripennis Black-winged Petrel [1038]	Foraging	Likely to occur

Scientific Name	Behaviour	Presence
Pterodroma solandri Providence Petrel [1040]	Foraging	Likely to occur
Puffinus assimilis Little Shearwater [59363]	Foraging	Likely to occur
Sterna sumatrana Black-naped Tern [800]	Breeding	Known to occur
Sula dactylatra Masked Booby [1021]	Breeding	Known to occur
Sula dactylatra Masked Booby [1021]	Foraging	Likely to occur
Sula leucogaster Brown Booby [1022]	Foraging	Likely to occur
Sula sula Red-footed Booby [1023]	Breeding	Known to occur
Sula sula Red-footed Booby [1023]	Foraging	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	Likely to occur
Thalasseus bergii Crested Tern [83000]	Breeding	Known to occur
Thalasseus bergii Crested Tern [83000]	Foraging	Likely to occur
Sharks		
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur
Carcharias taurus Grey Nurse Shark [64469]	Migration	Known to occur

Scientific Name	Behaviour	Presence
Carcharodon carcharias White Shark [64470]	Aggregation	Known to occur
Whales		
Megaptera novaeangliae Humpback Whale [38]	Breeding and calving	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Breeding likely	Likely to occur
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Resting on migration (southbound)	Known to occur

Bioregional Assessments		[Resource Information]
SubRegion	BioRegion	Website
Clarence-Moreton	Clarence-Moreton	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 is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Jul-2025

[Summary](#)

[Details](#)

- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

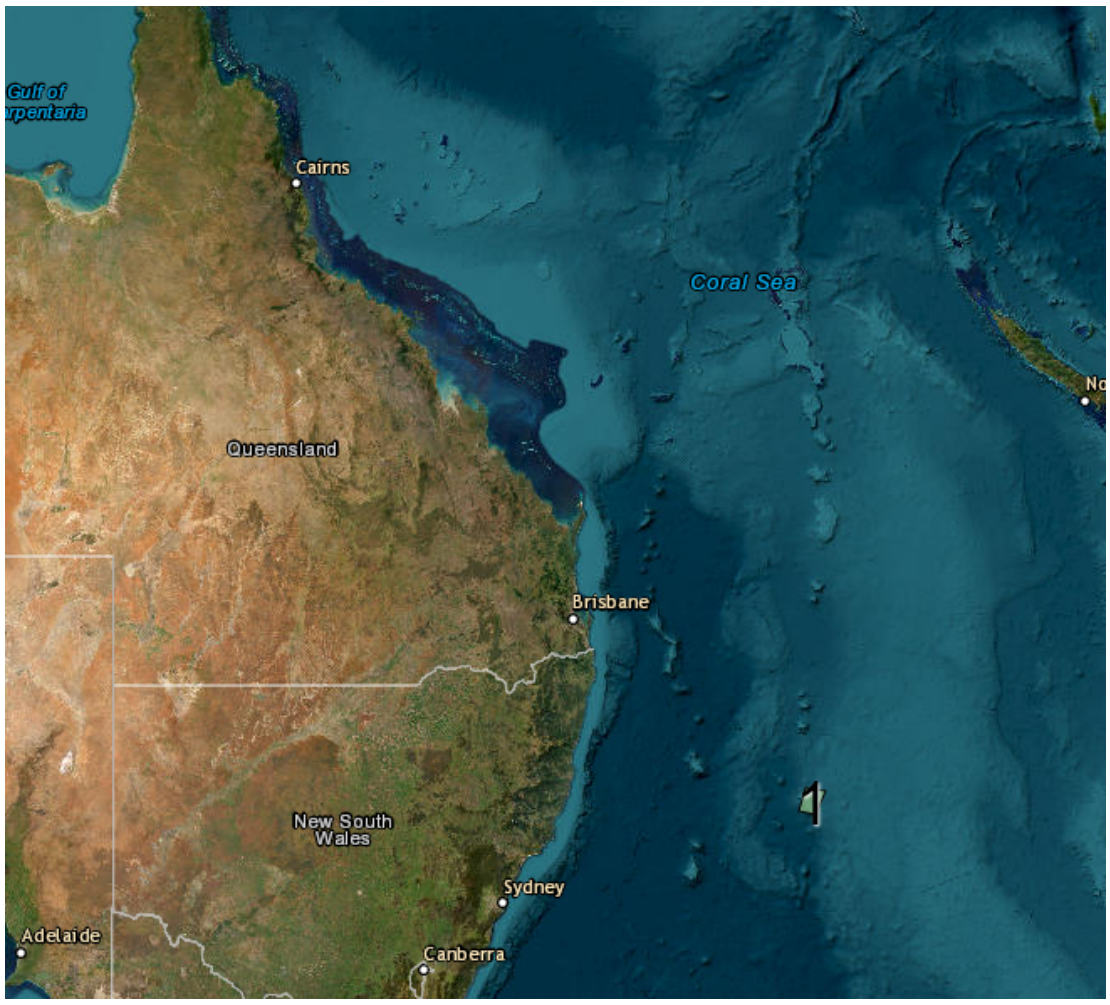

Figure: Lord Howe Environmental Sector

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	61
Listed Migratory Species:	51

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:	48
Whales and Other Cetaceans:	31
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	4
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:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	9
Key Ecological Features (Marine):	2
Biologically Important Areas:	31
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Legal Status
Lord Howe Island Group	NSW	Declared property

National Heritage Places [Resource Information]

Name	State	Legal Status
Natural		
Lord Howe Island Group	NSW	Listed place

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

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 known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
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
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Breeding known to occur within area
Hypotaenidia sylvestris Lord Howe Woodhen [87732]	Endangered	Breeding likely 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
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
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
Pterodroma heraldica		
Herald Petrel [66973]	Critically Endangered	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera		
Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta		
Kermadec Petrel (western) [64450]	Vulnerable	Breeding known to occur within area
Strepera graculina crissalis		
Lord Howe Island Currawong, Pied Currawong (Lord Howe Island) [25994]	Vulnerable	Species or species habitat known 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	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area
FISH		
Amphiprion mccullochi Whitesnout Anemonefish, McCulloch's Anemonefish [76925]	Critically Endangered	Species or species habitat known to occur within area
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely 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
INSECT		
Cormodes darwini a beetle [92235]	Critically Endangered	Species or species habitat known to occur within area
Dryococelus australis Lord Howe Island Phasmid, Land Lobster [66752]	Critically Endangered	Species or species habitat known to occur within area
Promethis sterrha a beetle [92260]	Critically Endangered	Species or species habitat known to occur within area
MAMMAL		

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
OTHER		
Pericryptodrilus nanus		
Lord Howe Earthworm [84736]	Critically Endangered	Species or species habitat known to occur within area
PLANT		
Anthosachne kingiana subsp. kingiana		
Phillip Island Wheat Grass [87946]	Critically Endangered	Species or species habitat known to occur within area
Calystegia affinis		
[48909]	Critically Endangered	Species or species habitat known to occur within area
Geniostoma huttonii		
[56368]	Endangered	Species or species habitat known to occur within area
Lepidorrhachis mooreana		
Little Mountain Palm, Moorei Palm [6388]	Critically Endangered	Species or species habitat known to occur within area
Polystichum moorei		
Rock Shield Fern [40755]	Endangered	Species or species habitat likely to occur within area
Xylosma parvifolia		
[48040]	Endangered	Species or species habitat known to occur within area
REPTILE		

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Christinus guentheri Lord Howe Island Gecko, Lord Howe Island Southern Gecko [59250]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Oligosoma lichenigerum Lord Howe Island Skink [91467]	Vulnerable	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	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 may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area
SNAIL		
Gudeoconcha sophiae magnifica Magnificent Helicarionid Land Snail [82864]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Mystivagor mastersi Masters' Charopid Land Snail [81247]	Critically Endangered	Species or species habitat known to occur within area
Placostylus bivaricosus Lord Howe Flax Snail, Lord Howe Placostylus [66769]	Endangered	Species or species habitat known to occur within area
Pseudocharopa ledgbirdi Mount Lidgbird Charopid Land Snail [85279]	Critically Endangered	Species or species habitat likely to occur within area
Pseudocharopa whiteleggei Whitelegge's Land Snail [81249]	Critically Endangered	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Breeding known to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Breeding known to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		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

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat 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
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to 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	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	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	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera bonaerensis		
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus		
Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa nebularia		
Common Greenshank, Greenshank [832]	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 known to occur within area
Anous albivitta as Procelsterna cerulea		
Grey Noddy, Grey Ternlet [91286]		Breeding known to occur within area
Anous stolidus		
Common Noddy [825]		Breeding known to occur within area
Ardenna carneipes as Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Breeding known to occur within area
Ardenna grisea as Puffinus griseus		
Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna pacifica as Puffinus pacificus		
Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	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 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
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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 known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Pterodroma cervicalis White-necked Petrel [59642]		Breeding likely to occur within area
Pterodroma nigripennis Black-winged Petrel [1038]		Breeding known to occur within area
Pterodroma solandri Providence Petrel [1040]		Breeding known to occur within area
Puffinus assimilis Little Shearwater [59363]		Breeding known to occur within area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	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	Species or species habitat may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area
Fish		
Cosmocampus howensis		
Lord Howe Pipefish [66208]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Halicampus boothae		
Booth's Pipefish [66218]		Species or species habitat may occur within area
Hippocampus kelloggi		
Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area
Solegnathus dunckeri		
Duncker's Pipehorse [66271]		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 likely to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	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 bonaerensis		
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
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

Current Scientific Name	Status	Type of Presence
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may 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 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 may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Lord Howe	Habitat Protection Zone (Lord Howe) (IUCN IV)
Lord Howe	Multiple Use Zone (IUCN VI)
Lord Howe	National Park Zone (IUCN II)
Lord Howe	National Park Zone (IUCN II)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Lord Howe Island	Permanent Park Preserve	NSW
Lord Howe Island	Marine Park	NSW

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Action clearly unacceptable			
Lord Howe Island Renewable Energy Project - Stage 2 Wind Turbines	2016/7790	Action Clearly Unacceptable	Completed
Controlled action			
Lord Howe Island Rodent Eradication Project, NSW	2016/7703	Controlled Action	Post-Approval
Not controlled action			
Air Traffic Control Infrastructure Facility	2007/3872	Not Controlled Action	Completed
Lord Howe Island Solar Photovoltaic Project	2015/7544	Not Controlled Action	Completed
Pilot study - Short term captive holding of 22 LHI Woodhen & 10 LHI Currawong, Lord Howe Island	2013/6847	Not Controlled Action	Completed
Seismic Station	2007/3301	Not Controlled Action	Completed
Not controlled action (particular manner)			
Lowering Blinky Beach Sand Dune to Comply with CASA Regulations for Runway 28, Lord Howe Island	2012/6599	Not Controlled Action (Particular Manner)	Post-Approval
Survey and Sampling of Lord Howe Island Reef	2008/3986	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Hybrid Renewable Energy (Solar & Wind Turbine), Lord Howe Island, NSW	2014/7231	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
Lord Howe seamount chain	Temperate east
Tasman Front and eddy field	Temperate east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Anous minutus Black Noddy [824]	Breeding	Known to occur
Anous minutus Black Noddy [824]	Foraging	Likely to occur
Anous stolidus Common Noddy [825]	Breeding	Known to occur
Anous stolidus Common Noddy [825]	Foraging	Likely to occur
Ardenna carneipes Flesh-footed Shearwater [82404]	Breeding	Known to occur
Ardenna carneipes Flesh-footed Shearwater [82404]	Foraging	Known to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur
Fregetta grallaria grallaria White-bellied Storm Petrel [64438]	Breeding	Known to occur
Fregetta grallaria grallaria White-bellied Storm Petrel [64438]	Foraging	Likely to occur
Gygis alba White Tern [807]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Gygis alba White Tern [807]	Foraging	Likely to occur
Onychoprion fuscata Sooty Tern [82847]	Breeding	Known to occur
Onychoprion fuscata Sooty Tern [82847]	Foraging	Likely to occur
Phaethon rubricauda Red-tailed Tropicbird [994]	Breeding	Known to occur
Phaethon rubricauda Red-tailed Tropicbird [994]	Foraging	Likely to occur
Procellaria parkinsoni Black Petrel [1048]	Foraging	Likely to occur
Procelsterna cerulea Grey Ternlet [64378]	Breeding	Known to occur
Procelsterna cerulea Grey Ternlet [64378]	Foraging	Likely to occur
Pterodroma macroptera Great-winged Petrel [1035]	Foraging	Likely to occur
Pterodroma neglecta neglecta Kermadec Petrel [64450]	Breeding	Known to occur
Pterodroma neglecta neglecta Kermadec Petrel [64450]	Foraging	Likely to occur
Pterodroma nigripennis Black-winged Petrel [1038]	Breeding	Known to occur
Pterodroma nigripennis Black-winged Petrel [1038]	Foraging	Likely to occur
Pterodroma solandri Providence Petrel [1040]	Breeding	Known to occur
Pterodroma solandri Providence Petrel [1040]	Foraging	Likely to occur
Puffinus assimilis Little Shearwater [59363]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Puffinus assimilis Little Shearwater [59363]	Foraging	Likely to occur
Sula dactylatra Masked Booby [1021]	Breeding	Known to occur
Sula dactylatra Masked Booby [1021]	Foraging	Likely to occur
Whales		
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Jul-2025

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

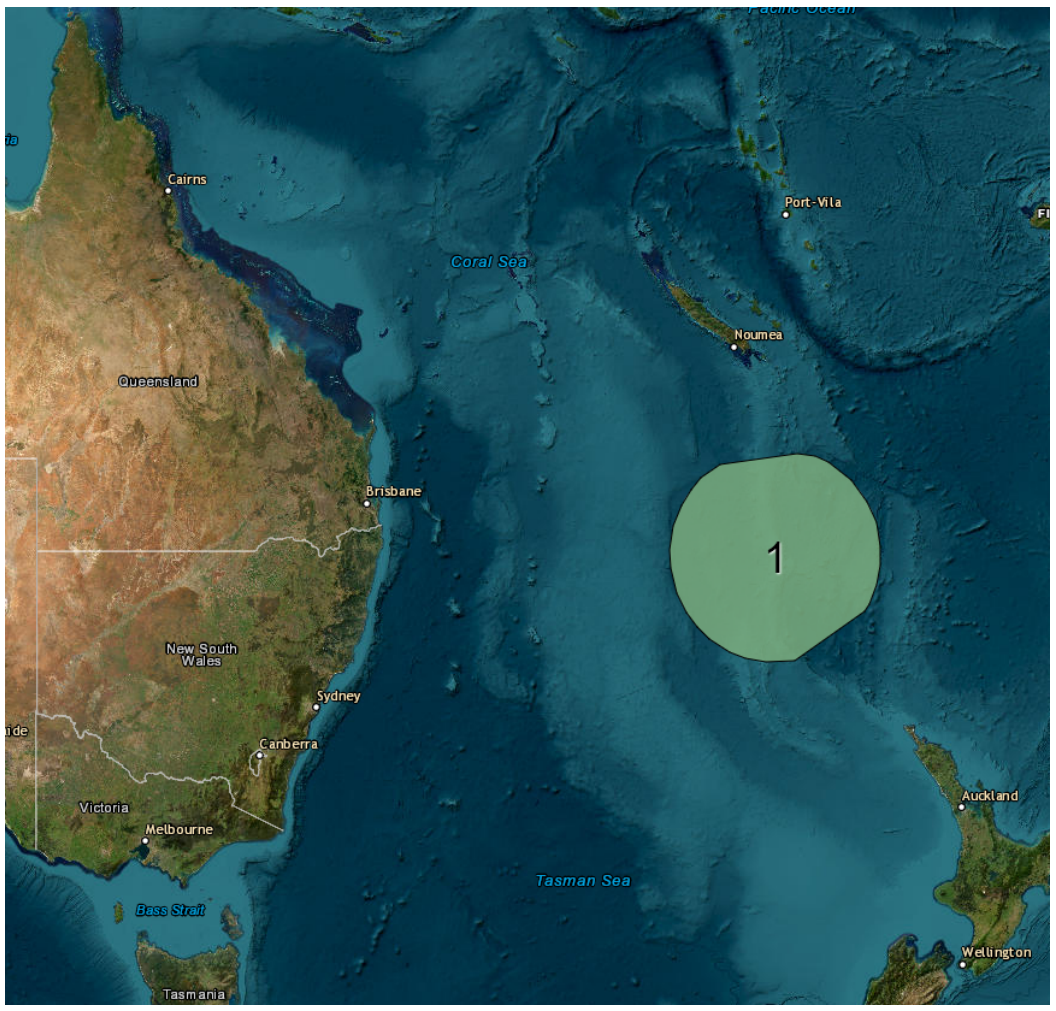

Figure: Norfolk Island Environmental Sector

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	1
National Heritage Places:	2
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	4
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	95
Listed Migratory Species:	46

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:	14
Commonwealth Heritage Places:	7
Listed Marine Species:	42
Whales and Other Cetaceans:	33
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	3
Australian Marine Parks:	3
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:	34
Key Ecological Features (Marine):	2
Biologically Important Areas:	28
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Legal Status
Australian Convict Sites (Kingston and Arthurs Vale Historic Area)	EXT	Declared property

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
HMS Sirius Shipwreck	EXT	Listed place
Kingston and Arthurs Vale Historic Area	EXT	Listed place

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
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 known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Cyanoramphus cookii Norfolk Island Green Parrot, Tasman Parakeet, Norfolk Island Parakeet [67046]	Endangered	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 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
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
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ninox novaeseelandiae undulata		
Norfolk Island Boobook, Norfolk Island Morepork, Southern Boobook (Norfolk Island) [26188]	Endangered	Breeding known to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachycephala pectoralis xanthoprocta		
Golden Whistler (Norfolk Island) [64444]	Vulnerable	Species or species habitat known to occur within area
Petroica multicolor		
Norfolk Island Robin, Pacific Robin [604]	Vulnerable	Breeding likely to occur within area
Pterodroma heraldica		
Herald Petrel [66973]	Critically Endangered	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera		
Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta		
Kermadec Petrel (western) [64450]	Vulnerable	Breeding known 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 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	Species or species habitat may 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	Species or species habitat may occur within area
FISH		
Epinephelus daemelii		
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely 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
MAMMAL		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Sousa sahulensis		
Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area
PLANT		

Scientific Name	Threatened Category	Presence Text
Abutilon julianae Norfolk Island Abutilon [27797]	Critically Endangered	Species or species habitat known to occur within area
Achyranthes arborescens Chaff Tree, Soft-wood [65879]	Critically Endangered	Species or species habitat known to occur within area
Achyranthes margaretarum Phillip Island Chaffy Tree [68426]	Critically Endangered	Species or species habitat known to occur within area
Anthosachne kingiana subsp. kingiana Phillip Island Wheat Grass [87946]	Critically Endangered	Species or species habitat known to occur within area
Blechnum norfolkianum Norfolk Island Water-fern [65885]	Endangered	Species or species habitat known to occur within area
Calystegia affinis [48909]	Critically Endangered	Species or species habitat known to occur within area
Clematis dubia a creeper, Clematis [22035]	Critically Endangered	Species or species habitat known to occur within area
Coprosma baueri Coastal Coprosma [37851]	Endangered	Species or species habitat known to occur within area
Coprosma pilosa Mountain Coprosma [37884]	Endangered	Species or species habitat known to occur within area
Cordyline obtecta Ti [65878]	Vulnerable	Species or species habitat known to occur within area
Dendrobium brachypus Norfolk Island Orchid [2592]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Dysoxylum bijugum Sharkwood, a tree [65892]	Vulnerable	Species or species habitat known to occur within area
Elatostema montanum Mountain Procris [33862]	Critically Endangered	Species or species habitat known to occur within area
Eria paleata listed as Phreatia paleata White Lace Orchid [56010]	Endangered	Species or species habitat known to occur within area
Euphorbia norfolkiana Norfolk Island Euphorbia [65887]	Critically Endangered	Species or species habitat known to occur within area
Euphorbia obliqua a herb [44385]	Vulnerable	Species or species habitat likely to occur within area
Hibiscus insularis Phillip Island Hibiscus [30614]	Critically Endangered	Species or species habitat likely to occur within area
Hypolepis dicksonioides Downy Ground-fern, Brake Fern, Ground Fern [10243]	Vulnerable	Species or species habitat likely to occur within area
Ileostylus micranthus Mistletoe [65891]	Vulnerable	Species or species habitat known to occur within area
Lastreopsis calantha Shield-fern, Shieldfern [65884]	Endangered	Species or species habitat known to occur within area
Melicope littoralis Shade Tree [22042]	Vulnerable	Species or species habitat known to occur within area
Melicytus latifolius Norfolk Island Mahoe [56677]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Melicytus ramiflorus subsp. oblongifolius Whiteywood, a tree [56680]	Vulnerable	Species or species habitat likely to occur within area
Meryta angustifolia Narrow-leaved Meryta [65881]	Vulnerable	Species or species habitat known to occur within area
Meryta latifolia Shade Tree, Broad-leaved Meryta [65882]	Critically Endangered	Species or species habitat likely to occur within area
Muehlenbeckia australis Shrubby Creeper, Pohuehue [68510]	Endangered	Species or species habitat known to occur within area
Myoporum obscurum Popwood, Sandalwood [50255]	Critically Endangered	Species or species habitat known to occur within area
Myrsine ralstoniae Beech [83889]	Vulnerable	Species or species habitat known to occur within area
Pennantia endlicheri Pennantia [65890]	Endangered	Species or species habitat known to occur within area
Pittosporum bracteolatum Oleander [47181]	Vulnerable	Species or species habitat known to occur within area
Planchonella costata Bastard Ironwood [30944]	Endangered	Species or species habitat known to occur within area
Plexaure limenophylax listed as Phreatia limenophylax Norfolk Island Phreatia [40903]	Critically Endangered	Species or species habitat known to occur within area
Polyphlebium endlicherianum Middle Filmy Fern [87494]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Pouzolzia australis listed as Boehmeria australis subsp. australis		
Tree Nettle, Nettletree [94054]	Critically Endangered	Species or species habitat known to occur within area
Pteris kingiana		
King's Brakefern [35183]	Endangered	Species or species habitat likely to occur within area
Pteris zahlbruckneriana		
Netted Brakefern [65893]	Endangered	Species or species habitat likely to occur within area
Ptisana salicina listed as Marattia salicina		
King Fern, Para, Potato Fern [91570]	Endangered	Species or species habitat likely to occur within area
Senecio australis		
a daisy [40250]	Vulnerable	Species or species habitat likely to occur within area
Senecio evansianus		
a daisy [55340]	Endangered	Species or species habitat known to occur within area
Senecio hooglandii		
a daisy [55346]	Vulnerable	Species or species habitat known to occur within area
Streblus pendulinus		
Siah's Backbone, Sia's Backbone, Isaac Wood [21618]	Endangered	Species or species habitat known to occur within area
Taeniophyllum norfolkianum		
Minute Orchid, Ribbon-root Orchid [82347]	Vulnerable	Species or species habitat likely to occur within area
Tmesipteris norfolkensis		
Hanging Fork-fern [65895]	Vulnerable	Species or species habitat known to occur within area
Ungeria floribunda		
Bastard Oak [41714]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
[Wikstroemia australis](#) Kurrajong [42074]	Critically Endangered	Species or species habitat known to occur within area
[Zehneria baueriana](#) Native Cucumber, Giant Cucumber [39253]	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 likely to occur within area
[Christinus guentheri](#) Lord Howe Island Gecko, Lord Howe Island Southern Gecko [59250]	Vulnerable	Species or species habitat likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
[Oligosoma lichenigerum](#) Lord Howe Island Skink [91467]	Vulnerable	Species or species habitat known to occur within area
SHARK		
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text
Galeorhinus galeus		
School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area
SNAIL		
Advena campbellii		
Campbell's Keeled Glass-snail [81250]	Critically Endangered	Species or species habitat known to occur within area
Advena grayi listed as Mathewsoconcha grayi ms		
Gray's Glass-snail [93276]	Critically Endangered	Species or species habitat likely to occur within area
Advena phillipii listed as Mathewsoconcha phillipii		
Phillip Island Glass-snail [93277]	Critically Endangered	Species or species habitat likely to occur within area
Advena stoddartii listed as Quintalia stoddartii		
Stoddart's Keeled Glass-snail [93279]	Critically Endangered	Species or species habitat likely to occur within area
Advena suteri listed as Mathewsoconcha suteri		
Suter's Striped Glass-snail [93278]	Critically Endangered	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Breeding known to occur within area
Ardenna carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat known to occur within area
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna pacifica		
Wedge-tailed Shearwater [84292]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat 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
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri		
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to 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	Species or species habitat may 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	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera bonaerensis		
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely 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 likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat may occur within area
[Physeter macrocephalus](#) Sperm Whale [59]		Species or species habitat may occur within area
[Sousa sahulensis as Sousa chinensis](#) Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat known to occur within area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area

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
Environment and Heritage	
Commonwealth Land - Norfolk Island National Park [92010]	NI
Commonwealth Land - Norfolk Island National Park [92002]	NI
Commonwealth Land - Norfolk Island National Park [92008]	NI
Commonwealth Land - Norfolk Island National Park [92013]	NI
Commonwealth Land - Norfolk Island National Park [92009]	NI
Commonwealth Land - Norfolk Island National Park [92001]	NI
Commonwealth Land - Norfolk Island National Park [92003]	NI
Commonwealth Land - Norfolk Island National Park [92006]	NI
Commonwealth Land - Norfolk Island National Park [92007]	NI
Commonwealth Land - Norfolk Island National Park [92005]	NI
Commonwealth Land - Norfolk Island National Park [92012]	NI
Commonwealth Land - Norfolk Island National Park [92014]	NI
Commonwealth Land - Norfolk Island National Park [92011]	NI
Commonwealth Land - Norfolk Island National Park [92004]	NI

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Arched Building, Longridge	EXT	Listed place
Cascade Reserve	EXT	Listed place
HMS Sirius Shipwreck	EXT	Listed place
Kingston and Arthurs Vale Commonwealth Tenure Area	EXT	Listed place
Natural		
Nepean Island Reserve	EXT	Listed place
Phillip Island	EXT	Listed place

Name	State	Status
Selwyn Reserve (2003 boundary)	EXT	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous albivitta as Procelsterna cerulea Grey Noddy, Grey Ternlet [91286]		Breeding known to occur within area
Anous stolidus Common Noddy [825]		Breeding known to occur within area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat known to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus		
Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli		
Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Morus serrator		
Australasian Gannet [1020]		Breeding known to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Phaethon lepturus		
White-tailed Tropicbird [1014]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Pterodroma cervicalis White-necked Petrel [59642]		Breeding known to occur within area
Pterodroma nigripennis Black-winged Petrel [1038]		Breeding known to occur within area
Pterodroma solandri Providence Petrel [1040]		Breeding known to occur within area
Puffinus assimilis Little Shearwater [59363]		Breeding known to occur within area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known 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 eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat may occur within area
Fish		
Halicampus boothae		
Booth's Pipefish [66218]		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 likely to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	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

Current Scientific Name	Status	Type of Presence
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
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

Current Scientific Name	Status	Type of Presence
[Kogia breviceps](#) Pygmy Sperm Whale [57]		Species or species habitat may occur within area
[Kogia sima](#) Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
[Lagenodelphis hosei](#) Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
[Lissodelphis peronii](#) Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]		Species or species habitat may 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 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 may occur within area

Current Scientific Name	Status	Type of Presence
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops 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

Commonwealth Reserves Terrestrial		[Resource Information]
Name	State	Type
Norfolk Island	EXT	Botanic Gardens (Commonwealth)

Name	State	Type
Norfolk Island (Mt Pitt)	EXT	National Park (Commonwealth)
Norfolk Island (Phillip Island)	EXT	National Park (Commonwealth)

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Norfolk	Habitat Protection Zone (IUCN IV)
Norfolk	National Park Zone (IUCN II)
Norfolk	Special Purpose Zone (Norfolk) (IUCN VI)

Extra Information

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Bounty Street Bridge Conservation Works	2023/09677		Referral Decision
Kingston and Arthur's Vale Historic Area (KAVHA) Sewerage Scheme (Stage 1)	2022/09393		Completed
Kingston Pier Channel Construction Project	2021/9124		Approval
Management of Kingston Waterways	2008/4238		Completed
Controlled action			
Adaptive Refurbishments of No 9 Quality Row Research and Interpretation Centre	2009/5119	Controlled Action	Post-Approval
Construction of a permanent jetty and/or breakwall	2007/3506	Controlled Action	Completed
Construction of permanent jetty at Ball Bay	2005/2442	Controlled Action	Completed
Residential Building	2002/911	Controlled Action	Completed
Seabed Dredging Adjacent to Kingston Pier	2009/5183	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
To extend, widen and strengthen the Cascade Jetty	2013/6741	Controlled Action	Post-Approval
Not controlled action			
Construction and demolition of a temporary ramp at Ball Bay	2005/2076	Not Controlled Action	Completed
Construction of residence portion 66m1, Driver Christian Road, Norfolk Island 2289	2016/7658	Not Controlled Action	Completed
Construction of runway end safety areas (RESA) at both ends of runway	2008/4182	Not Controlled Action	Completed
Eradication of Argentine ants using liquid bait	2008/4475	Not Controlled Action	Completed
HMS Sirius Collection - Rehousing, Norfolk Island	2012/6456	Not Controlled Action	Completed
Jacobs Rock Quarry Three Investigative Drill Holes	2014/7212	Not Controlled Action	Completed
Lord Howe Rise Marine Seismic Survey	2015/7623	Not Controlled Action	Completed
Norfolk Island Public Moorings Project	2001/278	Not Controlled Action	Completed
reconstruct Kingston Pier	2004/1752	Not Controlled Action	Completed
relocation of two condensing units for the cool room	2007/3428	Not Controlled Action	Completed
Residential dwelling, Portion 5a, Youngs Road	2004/1667	Not Controlled Action	Completed
Shipment of Spent Nuclear Fuel to USA	2007/3672	Not Controlled Action	Completed
Slaughter Bay Changing Shed reconstruction	2006/3183	Not Controlled Action	Completed
Tasman Frontier IODP marine geophysical site survey project, eastern Tasman Sea	2014/7204	Not Controlled Action	Completed
Transfer of Existing Crown Leases to Freehold Title	2004/1745	Not Controlled Action	Completed
Upgrade of Flagstaff Hill walking track	2004/1551	Not Controlled Action	Completed
Not controlled action (particular manner)			

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
GSM RBS on portion 81i mobile phone coverage	2006/2975	Not Controlled Action (Particular Manner)	Post-Approval
Hawaiki Fibre-Optic Submarine Cable installation	2016/7765	Not Controlled Action (Particular Manner)	Post-Approval
Relocation of Server and Cabling for IT Equipment	2009/5102	Not Controlled Action (Particular Manner)	Post-Approval
Residential Dwelling at Pn57a4 Driver Christian Road	2007/3470	Not Controlled Action (Particular Manner)	Post-Approval
Scientific seismic survey - Tectonic Event of the Cenozoic in the Tasman Area	2015/7524	Not Controlled Action (Particular Manner)	Post-Approval
Southern Cross Australia-New Zealand-America marine acoustic survey of the seabed	2017/7863	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Interim Landing at Cascade Bay, Norfolk Island	2021/9110	Referral Decision	Referral Publication
Proposed Subdivision Portion 91a Flagstaff, Norfolk Island	2007/3932	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
Norfolk Ridge	Temperate east
Tasman Front and eddy field	Temperate east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Anous minutus		
Black Noddy [824]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Anous minutus Black Noddy [824]	Foraging	Likely to occur
Anous stolidus Common Noddy [825]	Breeding	Known to occur
Anous stolidus Common Noddy [825]	Foraging	Likely to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur
Gygis alba White Tern [807]	Breeding	Known to occur
Gygis alba White Tern [807]	Foraging	Likely to occur
Onychoprion fuscata Sooty Tern [82847]	Breeding	Known to occur
Onychoprion fuscata Sooty Tern [82847]	Foraging	Likely to occur
Phaethon rubricauda Red-tailed Tropicbird [994]	Breeding	Known to occur
Phaethon rubricauda Red-tailed Tropicbird [994]	Foraging	Likely to occur
Procellaria parkinsoni Black Petrel [1048]	Foraging	Likely to occur
Procelsterna cerulea Grey Ternlet [64378]	Breeding	Known to occur
Procelsterna cerulea Grey Ternlet [64378]	Foraging	Likely to occur
Pterodroma cervicalis White-necked Petrel [59642]	Breeding	Known to occur
Pterodroma cervicalis White-necked Petrel [59642]	Foraging	Likely to occur

Scientific Name	Behaviour	Presence
Pterodroma neglecta neglecta Kermadec Petrel [64450]	Breeding	Known to occur
Pterodroma neglecta neglecta Kermadec Petrel [64450]	Foraging	Likely to occur
Pterodroma nigripennis Black-winged Petrel [1038]	Breeding	Known to occur
Pterodroma nigripennis Black-winged Petrel [1038]	Foraging	Likely to occur
Pterodroma solandri Providence Petrel [1040]	Breeding	Known to occur
Pterodroma solandri Providence Petrel [1040]	Foraging	Likely to occur
Puffinus assimilis Little Shearwater [59363]	Breeding	Known to occur
Puffinus assimilis Little Shearwater [59363]	Foraging	Likely to occur
Sula dactylatra Masked Booby [1021]	Breeding	Known to occur
Sula dactylatra Masked Booby [1021]	Foraging	Likely to occur
Whales		
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix 5 - EPBC Database Protected Matters Search

Appendix 5a - Operational Area EMBA PMST

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: 26-Jun-2025

[Summary](#)
[Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)
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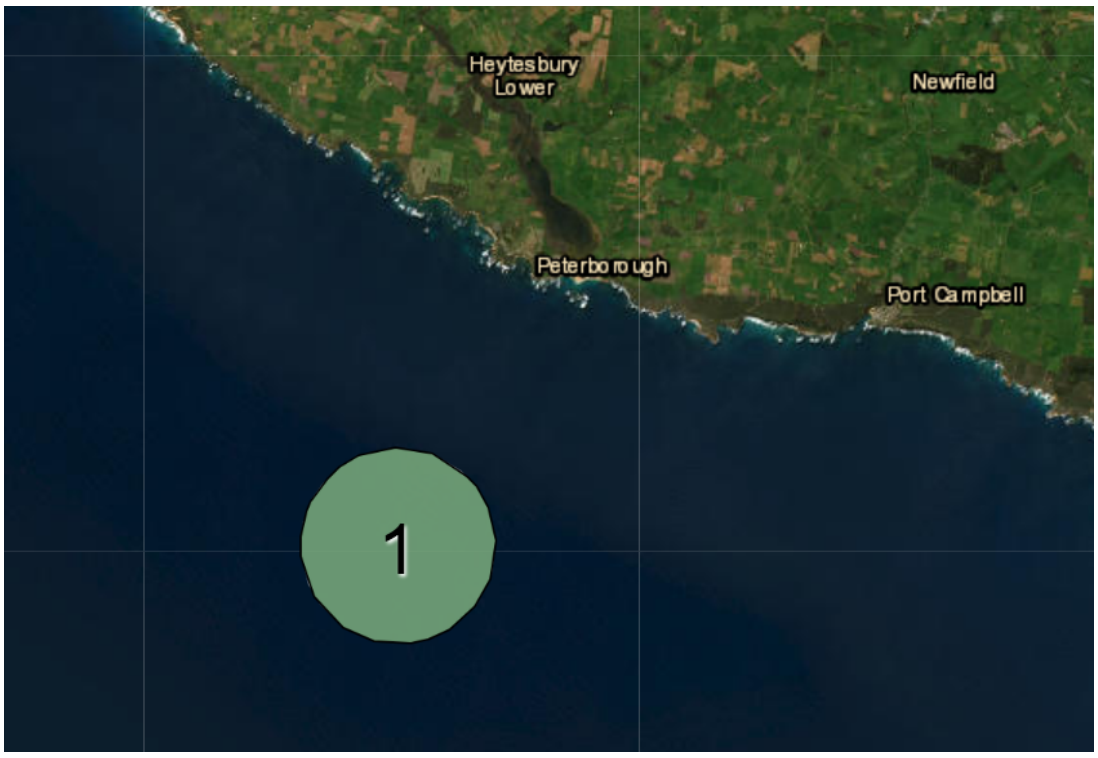

Operational Area

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	38
Listed Migratory Species:	39

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:	63
Whales and Other Cetaceans:	13
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:	14
Key Ecological Features (Marine):	None
Biologically Important Areas:	10
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)

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 epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route 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 likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche 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 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

Scientific Name	Threatened Category	Presence Text
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 borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour 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	Migration route known to occur within area

Scientific Name	Threatened Category	Presence Text
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	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]		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

Scientific Name	Threatened Category	Presence Text
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
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 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

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known 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 may occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Migration route 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

Scientific Name	Threatened Category	Presence Text
[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 likely to occur within area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area
[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
[Pandion haliaetus](#) Osprey [952]		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
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna grisea as Puffinus griseus 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 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

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
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
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area overfly marine 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
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	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	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 impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
[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
[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

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
[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]		Species or species habitat may occur within area
Reptile		
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known 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 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 likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
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

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Strike Oil NL Seismic Surveys	2000/107		Completed
Controlled action			
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval
Otway Development	2002/621	Controlled Action	Post-Approval
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Not controlled action			
Exploration drilling for liquid/gaseous hydrocarbons	2004/1681	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	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
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
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
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix 5b – Ecological LOWC EMBA PMST

Australian Government

Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Ecologiical LOWC EMBA

Report created: 26-Aug-2025

Summary

Details

- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat

Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	97
Listed Migratory Species:	62

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	3
Commonwealth Heritage Places:	None
Listed Marine Species:	106
Whales and Other Cetaceans:	28
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	11
Regional Forest Agreements:	1
Nationally Important Wetlands:	3
EPBC Act Referrals:	60
Key Ecological Features (Marine):	1
Biologically Important Areas:	17
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

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
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered	Community likely to occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community may occur within area
Natural Temperate Grassland of the Victorian Volcanic Plain	Critically Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to 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 may occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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 may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text
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
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 may 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

Scientific Name	Threatened Category	Presence Text
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
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
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
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
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 impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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
CRUSTACEAN		
Euastacus bispinosus Glenelg Spiny Freshwater Crayfish, Pricklyback [81552]	Endangered	Species or species habitat likely to occur within area
FISH		
Hoplostethus atlanticus Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
Nannoperca obscura Yarra Pygmy Perch [26177]	Endangered	Species or species habitat likely to occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		

Scientific Name	Threatened Category	Presence Text
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
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 known to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known 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 likely to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Breeding 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 known to occur within area
Miniopterus orianae bassanii		
Southern Bent-wing Bat [87645]	Critically Endangered	Breeding known to occur within area
Neophoca cinerea		
Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Petauroides volans		
Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus trisulcatus		
Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys fumeus		
Smoky Mouse, Konoom [88]	Endangered	Species or species habitat may occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys shortridgei		
Heath Mouse, Dayang, Heath Rat [77]	Endangered	Species or species habitat may occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
PLANT		
Amphibromus fluitans		
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Caladenia concolor		
Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area
Caladenia hastata		
Melblom's Spider-orchid [16118]	Endangered	Species or species habitat likely to occur within area
Eucalyptus strzeleckii		
Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area
Ixodia achillaeoides subsp. arenicola Sand Ixodia, Ixodia [21474]	Vulnerable	Species or species habitat may occur within area
Lepidium aschersonii Spiny Peppercress [10976]	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 known to occur within area
Prasophyllum litorale listed as Prasophyllum littorale Coastal Leek Orchid [55234]	Critically Endangered	Species or species habitat likely to occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum suaveolens Fragrant Leek-orchid [64956]	Endangered	Species or species habitat may occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Senecio psilocarpus		
Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known 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]	Endangered	Species or species habitat may occur within area
Thelymitra orientalis		
Hoary Sun-orchid [88011]	Critically Endangered	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	Breeding 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 known to occur within area
Lissolepis coventryi		
Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Centrophorus uyato		
Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	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
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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

Scientific Name	Threatened Category	Presence Text
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]	Vulnerable	Species or species habitat may occur within area
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 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
Migratory Marine Species		
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 known to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caperea marginata		
Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharias taurus		
Grey Nurse Shark [64469]		Species or species habitat may occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eubalaena australis as Balaena glacialis australis		
Southern Right Whale [40]	Endangered	Breeding 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
Migratory Terrestrial Species		
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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 may 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 ruficollis Red-necked Stint [860]		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 likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting 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

Scientific Name	Threatened Category	Presence Text
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat 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 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

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Defence	
Defence - WARRNAMBOOL TRAINING DEPOT [21111]	VIC
Unknown	
Commonwealth Land - [21492]	VIC

Commonwealth Land Name	State
Commonwealth Land - [21583]	VIC

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
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine 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 may 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
Calidris alba Sanderling [875]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
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 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 ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat 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 likely 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
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

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
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
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat 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

Scientific Name	Threatened Category	Presence Text
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine 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
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
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 may 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

Scientific Name	Threatened Category	Presence Text
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
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
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	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

Scientific Name	Threatened Category	Presence Text
Rostratula australis as Rostratula benghalensis (sensu lato)		
Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine 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
Sternula albifrons as Sterna albifrons		
Little Tern [82849]	Vulnerable	Species or species habitat may 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 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 impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		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

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys mollisoni Mollison's Pipefish [66260]		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
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

Scientific Name	Threatened Category	Presence Text
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
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]		Species or species habitat likely to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat 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 known to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known 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	Breeding known to occur within area

Current Scientific Name	Status	Type of Presence
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
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 hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
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
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

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Apollo	Multiple Use Zone (IUCN VI)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Aire River	Heritage River	VIC
Aire River W.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Bay of Islands Coastal Park	Conservation Park	VIC
Cape Nelson	State Park	VIC
Great Otway	National Park	VIC
Lake Gillear W.R	Natural Features Reserve	VIC
Merri	Marine Sanctuary	VIC
Port Campbell	National Park	VIC
Princetown W.R	Natural Features Reserve	VIC
The Arches	Marine Sanctuary	VIC
Twelve Apostles	Marine National Park	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
West Victoria RFA	Victoria

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Lower Aire River Wetlands	VIC
Lower Merri River Wetlands	VIC
Princetown Wetlands	VIC

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Cape Winds Offshore Windfarm Geophysical, Geotechnical and Marine Studies	2023/09629		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters	2024/09879		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters ? May 2025	2025/10138		Referral Decision
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
SMAP telecommunications submarine cable installation	2024/09989		Completed
Southern Winds Offshore Wind Project	2022/09435		Completed
Southern Winds Offshore Wind Project Initial Marine Field Investigations	2022/09436		Completed
Spinifex Offshore Wind Farm - Offshore Investigations	2024/09918		Referral Decision
Strike Oil NL Seismic Surveys	2000/107		Completed
Controlled action			
Alston-1 petroleum exploration well, permit VIC/P44	2003/1315	Controlled Action	Post-Approval
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval
Otway Development	2002/621	Controlled Action	Post-Approval
Residential Subdivision & Infrastructure Parish of Belfast	2005/1954	Controlled Action	Completed
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Strike Oil Gas Exploration Well, Otway Basin (VIC/P44)	2000/97	Controlled Action	Completed
Twelve Apostles Saddle Lookout	2019/8571	Controlled Action	Post-Approval
VIC Offshore Windfarm	2021/8966	Controlled Action	Assessment Approach
VICP61 2D Marine Seismic Survey	2008/4075	Controlled Action	Completed
Not controlled action			
construction of pump station for pump diversion from the Barham River	2003/1242	Not Controlled Action	Completed
Enterprise 1 Exploration Drilling Program, near Port Campbell, Vic	2019/8438	Not Controlled Action	Completed
Exploration drilling for liquid/gaseous hydrocarbons	2004/1681	Not Controlled Action	Completed
Gas Field Development	2006/2635	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Gas Fields Development	2011/5879	Not Controlled Action	Completed
Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic	2015/7551	Not Controlled Action	Completed
Henry-1 Exploration Well, Petroleum Permit Area VIC/P44	2005/2147	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Maintenance of Access Track and Weed Removal	2009/4973	Not Controlled Action	Completed
Nirranda South Wind Farm Pty Ltd	2002/763	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed
Port Campbell Headland Walking Trail Realignment	2012/6676	Not Controlled Action	Completed
Stage 1 residential subdivision, Anna Catherine Drive	2005/1992	Not Controlled Action	Completed
Track construction - Great Ocean Walk	2002/793	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Victorian Generator Project	2005/1984	Not Controlled Action	Completed
Wind Farm Construction and Operation	2001/471	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2005/2295	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey within Torquay Sub-basin off sthn Victoria	2012/6256	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
BHPBilliton Otway 3D Seismic Survey	2007/3443	Not Controlled Action (Particular Manner)	Post-Approval
Deepwater Sorell Basin 2001 Non-Exclusive 2D Seismic Survey	2001/156	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
La Bella 3D Marine Seismic Survey, Otway Basin, VIC	2012/6683	Not Controlled Action (Particular Manner)	Post-Approval
OTE10 2D Marine Seismic Survey	2009/5223	Not Controlled Action (Particular Manner)	Post-Approval
Otway Basin Exploration Drilling Campaign, Vic	2011/6125	Not Controlled Action (Particular Manner)	Post-Approval
Santos 2D Seismic Survey VIC/P44 & VIC/P51	2003/1213	Not Controlled Action (Particular Manner)	Post-Approval
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Speculant 3D Transition Zone Seismic Survey	2010/5558	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Torquay Sub-basin (VIC/P62) OTE12-3D Seismic Survey	2012/6655	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5700	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval
Vic-P51 and Vic-P52 2D seismic survey	2002/811	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
3D Marine Seismic Survey	2011/6156	Referral Decision	Completed
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed
VICP61 2D Marine Seismic Survey	2008/3975	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
Bonney Coast Upwelling	South-east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur
Morus serrator Australasian Gannet [1020]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	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]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix 5c – Light EMBA PMST

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: 26-Jun-2025

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements

Light EMBA 20km Operational Area

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:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	81
Listed Migratory Species:	51

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:	88
Whales and Other Cetaceans:	14
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:	5
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	40
Key Ecological Features (Marine):	None
Biologically Important Areas:	10
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

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
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to 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 may occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	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

Scientific Name	Threatened Category	Presence Text
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may 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 may 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 may 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
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
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area

Scientific Name	Threatened Category	Presence Text
[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
[Pterodroma leucoptera leucoptera](#) Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
[Pterodroma mollis](#) Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may 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
[Sternula albifrons](#) Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
[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

Scientific Name	Threatened Category	Presence Text
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 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
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 likely to occur within area
FISH		

Scientific Name	Threatened Category	Presence Text
[Nannoperca obscura](#)		
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat likely to occur within area
[Prototroctes maraena](#)		
Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
[Seriolella brama](#)		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
[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
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	Foraging, feeding or related behaviour known to occur within area
[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 may occur within area
[Eubalaena australis](#)		
Southern Right Whale [40]	Endangered	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
[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 known to occur within area
[Miniopterus orianae bassanii](#)		
Southern Bent-wing Bat [87645]	Critically Endangered	Species or species habitat likely to occur within area
[Neophoca cinerea](#)		
Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
[Petaurus australis australis](#)		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area
[Potorous tridactylus trisulcatus](#)		
Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat likely to occur within area
[Pseudomys novaehollandiae](#)		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
[Pteropus poliocephalus](#)		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
PLANT		
[Amphibromus fluitans](#)		
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
[Glycine latrobeana](#)		
Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
[Haloragis exalata subsp. exalata](#)		
Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Lepidium aschersonii Spiny Peppercress [10976]	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 may occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known to occur within area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat known to occur within area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	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	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Lissolepis coventryi		
Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Migration route known to occur within area
Galeorhinus galeus		
School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	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
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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

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
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]	Vulnerable	Species or species habitat may occur within area
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

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
Migratory Marine Species		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known 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 may occur within area

Scientific Name	Threatened Category	Presence Text
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Migration route known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding 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	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding 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 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 likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	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
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text
[Numenius madagascariensis](#)		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
[Numenius minutus](#)		
Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
[Pandion haliaetus](#)		
Osprey [952]		Species or species habitat likely to occur within area
[Tringa nebularia](#)		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

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 may occur within area
[Ardenna tenuirostris as Puffinus tenuirostris](#)		
Short-tailed Shearwater [82652]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
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
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
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
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	Migration route likely 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
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within 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
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may 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 as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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 nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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
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
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

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
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]		Species or species habitat may occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding 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	Breeding likely to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		

Current Scientific Name	Status	Type of Presence
[Balaenoptera acutorostrata](#) Minke Whale [33]		Species or species habitat may 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	Foraging, feeding or related behaviour known 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 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	Breeding known to occur within area
[Grampus griseus](#) Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
[Lagenorhynchus obscurus](#) Dusky Dolphin [43]		Species or species habitat may occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]		Species or species habitat likely to occur within area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
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

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Bay of Islands Coastal Park	Conservation Park	VIC
Curdie Vale N.C.R.	Natural Features Reserve	VIC
Port Campbell	National Park	VIC
The Arches	Marine Sanctuary	VIC
Twelve Apostles	Marine National Park	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
West Victoria RFA	Victoria

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Decommissioning of the Minerva Pipeline in Victorian state waters	2024/09879		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters ? May 2025	2025/10138		Referral Decision
SEA Gas Project transmission pipeline	2001/513		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Strike Oil NL Seismic Surveys	2000/107		Completed
Controlled action			
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval
Otway Development	2002/621	Controlled Action	Post-Approval
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Strike Oil Gas Exploration Well, Otway Basin (VIC/P44)	2000/97	Controlled Action	Completed
VICP61 2D Marine Seismic Survey	2008/4075	Controlled Action	Completed
Not controlled action			
CO2 geosequestration - Otway Basin Pilot Project	2006/2699	Not Controlled Action	Completed
Enterprise 1 Exploration Drilling Program, near Port Campbell, Vic	2019/8438	Not Controlled Action	Completed
Exploration drilling for liquid/gaseous hydrocarbons	2004/1681	Not Controlled Action	Completed
Gas Field Development	2006/2635	Not Controlled Action	Completed
Gas Fields Development	2011/5879	Not Controlled Action	Completed
Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic	2015/7551	Not Controlled Action	Completed
Henry-1 Exploration Well, Petroleum Permit Area VIC/P44	2005/2147	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Minerva Cut Back Project, Vic	2017/8036	Not Controlled Action	Completed
Nirranda South Wind Farm Pty Ltd	2002/763	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Port Campbell Headland Walking Trail Realignment	2012/6676	Not Controlled Action	Completed
Track construction - Great Ocean Walk	2002/793	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Victorian Generator Project	2005/1984	Not Controlled Action	Completed
Wind Farm Construction and Operation	2001/471	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Otway Basin Exploration Drilling Campaign, Vic	2011/6125	Not Controlled Action (Particular Manner)	Post-Approval
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval
Shaw River Power Station construct gas pipeline and associated infrastructure	2009/5089	Not Controlled Action (Particular Manner)	Post-Approval
Southern Gas Pipeline Project	2002/619	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		(Particular Manner)	
Speculant 3D Transition Zone Seismic Survey	2010/5558	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	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
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

Scientific Name	Behaviour	Presence
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
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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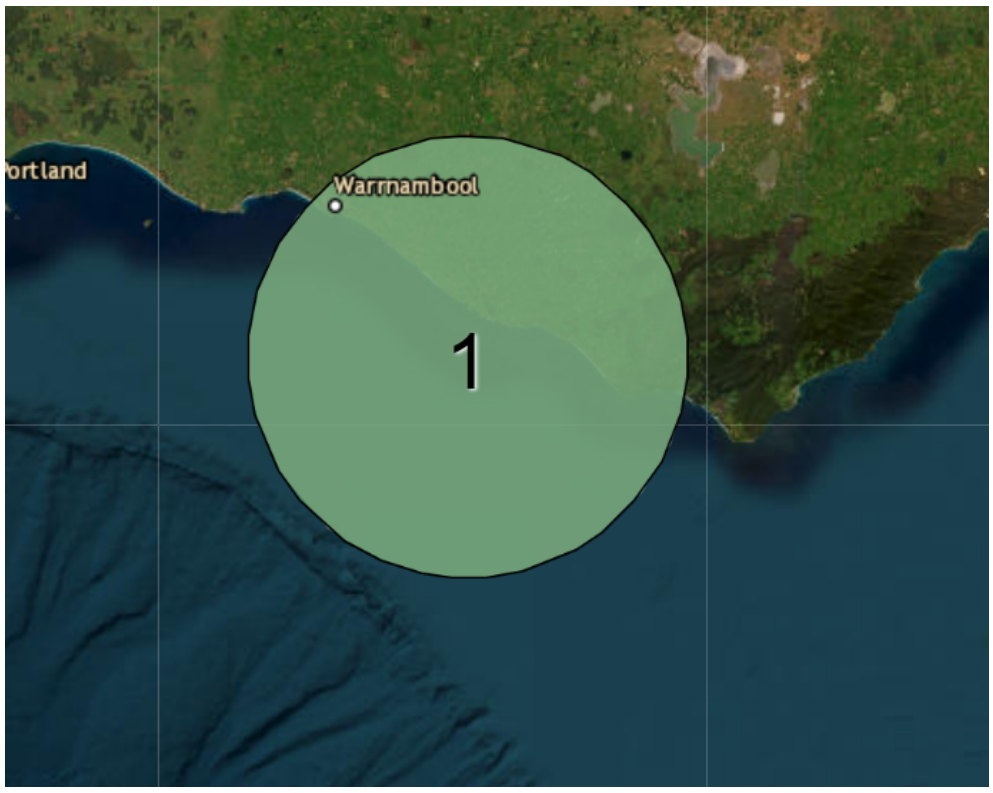
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 26-Jun-2025

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements



Light EMBA 49km

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:	1
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	100
Listed Migratory Species:	63

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:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	103
Whales and Other Cetaceans:	28
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:	27
Regional Forest Agreements:	1
Nationally Important Wetlands:	3
EPBC Act Referrals:	65
Key Ecological Features (Marine):	1
Biologically Important Areas:	14
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Western district lakes	10 - 20km upstream from 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
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered	Community known to occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community may occur within area
Natural Temperate Grassland of the Victorian Volcanic Plain	Critically Endangered	Community likely to occur within area
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate	Critically Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Lowland Plains		
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	Foraging, feeding or related behaviour may occur within area
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Arenaria interpres		
Ruddy Turnstone [872]	Vulnerable	Foraging, feeding or related behaviour 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	Foraging, feeding or related behaviour known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat 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
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour known to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	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
Falco hypoleucos Grey Falcon [929]	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 may occur within area

Scientific Name	Threatened Category	Presence Text
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
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
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

Scientific Name	Threatened Category	Presence Text
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
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
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
FISH		
Gadopsis sp. SWV Western Victorian Blackfish [90722]	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

Scientific Name	Threatened Category	Presence Text
[Nannoperca obscura](#)		
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat known to occur within area
[Prototroctes maraena](#)		
Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
[Seriolella brama](#)		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
[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
INSECT		
[Synemon plana](#)		
Golden Sun Moth [25234]	Vulnerable	Species or species habitat may 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	Foraging, feeding or related behaviour known to occur within area
[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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding 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 known to occur within area
Miniopterus orianae bassanii Southern Bent-wing Bat [87645]	Critically Endangered	Breeding known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	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
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
PLANT		
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area
Dianella amoena Matted Flax-lily [64886]	Endangered	Species or species habitat likely to occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area
Eucalyptus strzeleckii Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area
Lepidium aschersonii Spiny Peppercress [10976]	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
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum suaveolens Fragrant Leek-orchid [64956]	Endangered	Species or species habitat may occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known 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]	Endangered	Species or species habitat may occur within area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eulamprus tympanum marnieae		
Corangamite Water Skink, Dreeite Water Skink [64487]	Endangered	Species or species habitat may occur within area
Lissolepis coventryi		
Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known 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 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
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna tenuirostris		
Short-tailed Shearwater [82652]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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]	Vulnerable	Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
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 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 musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known 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
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding 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	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding 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

Scientific Name	Threatened Category	Presence Text
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely 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
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Calidris alba Sanderling [875]		Foraging, feeding or related behaviour known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area
[Calidris ruficollis](#) Red-necked Stint [860]		Foraging, feeding or related behaviour known to occur within area
[Charadrius bicinctus](#) Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour 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
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
[Numenius minutus](#) Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
[Numenius phaeopus](#) Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area
[Pandion haliaetus](#) Osprey [952]		Species or species habitat known to occur within area
[Pluvialis fulva](#) Pacific Golden Plover [25545]		Species or species habitat known to occur within area
[Tringa brevipes](#) Grey-tailed Tattler [851]		Foraging, feeding or related behaviour known to occur within area
[Tringa glareola](#) Wood Sandpiper [829]		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
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		Foraging, feeding or related behaviour 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
Defence	
Defence - WARRNAMBOOL TRAINING DEPOT [21111]	VIC

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
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine 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 may occur within area
Ardenna tenuirostris as Puffinus tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Breeding likely to occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Calidris alba Sanderling [875]		Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
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 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 ruficollis Red-necked Stint [860]		Foraging, feeding or related behaviour known to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius bicinctus Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Foraging, feeding or related behaviour known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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
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
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

Scientific Name	Threatened Category	Presence Text
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Foraging, feeding or related behaviour 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
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
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
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 may 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]		Breeding known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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]		Foraging, feeding or related behaviour known to occur within area
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
Phalacrocorax fuscescens Black-faced Cormorant [59660]		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]		Species or species habitat known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Recurvirostra novaehollandiae Red-necked Avocet [871]		Foraging, feeding or related behaviour 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 known to occur within area overfly marine 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
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may 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 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

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
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]		Foraging, feeding or related behaviour known to occur within area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		Foraging, feeding or related behaviour 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
[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
[Leptoichthys fistularius](#) Brushtail Pipefish [66248]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
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]		Species or species habitat likely to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding 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 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 musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
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 may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding 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
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely 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

Current Scientific Name	Status	Type of Presence
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
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
Bay of Islands Coastal Park	Conservation Park	VIC
Brucknell Creek F.F.R	Nature Conservation Reserve	VIC
Carpendeit	Reference Area	VIC

Protected Area Name	Reserve Type	State
Carpendeit B.R.	Natural Features Reserve	VIC
Cobrico Swamp W.R	Natural Features Reserve	VIC
Cooriemungle	Reference Area	VIC
Cooriemungle Creek F.R	Nature Conservation Reserve	VIC
Coradjil B.R.	Natural Features Reserve	VIC
Coradjil N.C.R.	Natural Features Reserve	VIC
Crinoline Creek	Reference Area	VIC
Curdie Vale N.C.R.	Natural Features Reserve	VIC
Ecklin South Swamp N.C.R.	Natural Features Reserve	VIC
Great Otway	National Park	VIC
Hopkins Falls S.R.	Natural Features Reserve	VIC
Jancourt N.C.R.	Natural Features Reserve	VIC
Johanna Falls S.R.	Natural Features Reserve	VIC
Lake Gillear W.R	Natural Features Reserve	VIC
Latrobe B.R.	Natural Features Reserve	VIC
Merri	Marine Sanctuary	VIC
Nullawarre F.R.	Nature Conservation Reserve	VIC
Port Campbell	National Park	VIC
Princetown W.R	Natural Features Reserve	VIC
The Arches	Marine Sanctuary	VIC
Timboon I1 B.R	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Tomahawk Creek	Reference Area	VIC
Twelve Apostles	Marine National Park	VIC
Unnamed P0126	Private Nature 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
West Victoria RFA	Victoria

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Cobden-Terang Volcanic Craters	VIC
Lower Merri River Wetlands	VIC
Princetown Wetlands	VIC

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Decommissioning of the Minerva Pipeline in Victorian state waters	2024/09879		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters ? May 2025	2025/10138		Referral Decision
Geographe-A gas exploration well	2000/82		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed
Mumblin Wind Farm	2024/10068		Assessment
Otway Astrolabe 3D Marine Seismic Survey, Otway Basin	2012/6421		Completed
SEA Gas Project transmission pipeline	2001/513		Completed
Spinifex Offshore Wind Farm - Offshore Investigations	2024/09918		Referral Decision
Strike Oil NL Seismic Surveys	2000/107		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Swansons Lane Wind Farm	2024/09949		Assessment
Thylacine-A Exploration Well	2000/81		Completed
Controlled action			
Alston-1 petroleum exploration well, permit VIC/P44	2003/1315	Controlled Action	Post-Approval
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval
Otway Development	2002/621	Controlled Action	Post-Approval
Residential Subdivision & Infrastructure Parish of Belfast	2005/1954	Controlled Action	Completed
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Strike Oil Gas Exploration Well, Otway Basin (VIC/P44)	2000/97	Controlled Action	Completed
Twelve Apostles Saddle Lookout	2019/8571	Controlled Action	Post-Approval
VICP61 2D Marine Seismic Survey	2008/4075	Controlled Action	Completed
Not controlled action			
CO2 geosequestration - Otway Basin Pilot Project	2006/2699	Not Controlled Action	Completed
Enterprise 1 Exploration Drilling Program, near Port Campbell, Vic	2019/8438	Not Controlled Action	Completed
Exploration drilling for liquid/gaseous hydrocarbons	2004/1681	Not Controlled Action	Completed
Gas Field Development	2006/2635	Not Controlled Action	Completed
Gas Fields Development	2011/5879	Not Controlled Action	Completed
Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic	2015/7551	Not Controlled Action	Completed
Henry-1 Exploration Well, Petroleum Permit Area VIC/P44	2005/2147	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
Kelly Swamp Boardwalk Construction	2010/5371	Not Controlled Action	Completed
Minerva Cut Back Project, Vic	2017/8036	Not Controlled Action	Completed
Naroghid Wind Farm	2004/1542	Not Controlled Action	Completed
Newfield wind farm	2007/3226	Not Controlled Action	Completed
Nirranda South Wind Farm Pty Ltd	2002/763	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed
Port Campbell Headland Walking Trail Realignment	2012/6676	Not Controlled Action	Completed
Track construction - Great Ocean Walk	2002/793	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Victorian Generator Project	2005/1984	Not Controlled Action	Completed
Wind Farm Construction and Operation	2001/471	Not Controlled Action	Completed
Wind farm development	2005/1960	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2005/2295	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey near King Island	2004/1461	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Astrolabe 3D Marine Seismic Survey	2011/6048	Not Controlled Action (Particular Manner)	Post-Approval
BHPBilliton Otway 3D Seismic Survey	2007/3443	Not Controlled Action (Particular Manner)	Post-Approval
Deepwater Sorell Basin 2001 Non-Exclusive 2D Seismic Survey	2001/156	Not Controlled Action (Particular Manner)	Post-Approval
Drill and Profile Exploration Well Somerset 1, License Area T34P	2009/5037	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
Gas Pipeline Crossing at Mount Emu Creek	2009/4913	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
La Bella 3D Marine Seismic Survey, Otway Basin, VIC	2012/6683	Not Controlled Action (Particular Manner)	Post-Approval
Otway Basin Exploration Drilling Campaign, Vic	2011/6125	Not Controlled Action (Particular Manner)	Post-Approval
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Shaw River Power Station construct gas pipeline and associated infrastructure	2009/5089	Not Controlled Action (Particular Manner)	Post-Approval
Southern Gas Pipeline Project	2002/619	Not Controlled Action (Particular Manner)	Post-Approval
Speculant 3D Transition Zone Seismic Survey	2010/5558	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5700	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval
Vic-P51 and Vic-P52 2D seismic survey	2002/811	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed
VICP61 2D Marine Seismic Survey	2008/3975	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
West Tasmania Canyons	South-east

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	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]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present

Scientific Name	Behaviour	Presence
Balaenoptera musculus brevicauda		
Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix 5d – MDO EMBA PMST

Australian Government

Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 26-Jun-2025

Summary

Details

- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat

Acknowledgements

Figure: MDO EMBA

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:	1
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	94
Listed Migratory Species:	54

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:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	93
Whales and Other Cetaceans:	30
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	14
Regional Forest Agreements:	1
Nationally Important Wetlands:	2
EPBC Act Referrals:	82
Key Ecological Features (Marine):	2
Biologically Important Areas:	17
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Glenelg estuary and discovery bay wetlands	Within 10km of 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
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Karst springs and associated alkaline fens of the Naracoorte Coastal Plain Bioregion	Endangered	Community may occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to 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 may occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	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

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
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may 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 may 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 likely 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

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
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely 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
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may 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 albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
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 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 likely to occur within area
CRUSTACEAN		
[Euastacus bispinosus](#)		
Glenelg Spiny Freshwater Crayfish, Pricklyback [81552]	Endangered	Species or species habitat may occur within area
FISH		
[Hoplostethus atlanticus](#)		
Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
[Nannoperca obscura](#)		
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat may occur within area
[Prototroctes maraena](#)		
Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
[Seriolella brama](#)		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
[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
MAMMAL		
[Antechinus minimus maritimus](#)		
Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known 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	Breeding 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 known to occur within area
Miniopterus orianae bassanii Southern Bent-wing Bat [87645]	Critically Endangered	Roosting known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys shortridgei		
Heath Mouse, Dayang, Heath Rat [77]	Endangered	Species or species habitat may occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
PLANT		
Amphibromus fluitans		
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Caladenia concolor		
Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area
Caladenia hastata		
Melblom's Spider-orchid [16118]	Endangered	Species or species habitat likely to occur within area
Eucalyptus strzeleckii		
Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area
Glycine latrobeana		
Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. exalata		
Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Ixodia achillaeoides subsp. arenicola Sand Ixodia, Ixodia [21474]	Vulnerable	Species or species habitat likely to occur within area
Lepidium aschersonii Spiny Peppercress [10976]	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 may occur within area
Prasophyllum litorale listed as Prasophyllum littorale Coastal Leek Orchid [55234]	Critically Endangered	Species or species habitat likely to occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known 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]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thelymitra orientalis		
Hoary Sun-orchid [88011]	Critically Endangered	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	Species or species habitat may occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Lissolepis coventryi		
Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known 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

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

Scientific Name	Threatened Category	Presence Text
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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

Scientific Name	Threatened Category	Presence Text
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
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 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 known to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour 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	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Eubalaena australis as Balaena glacialis australis		
Southern Right Whale [40]	Endangered	Breeding 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
Migratory Terrestrial Species		
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
[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 known to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	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
[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
[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
[Pandion haliaetus](#) Osprey [952]		Species or species habitat known to occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Unknown	
Commonwealth Land - [21492]	VIC
Commonwealth Land - [21583]	VIC

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
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine 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 may occur within area
Ardenna tenuirostris as Puffinus tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat 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
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
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
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		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 overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
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 may 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	Migration route likely 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
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

Scientific Name	Threatened Category	Presence Text
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within 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
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may 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 as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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 nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
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 mollisoni Mollison's Pipefish [66260]		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
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
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]		Species or species habitat likely to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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 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 known to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known 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

Current Scientific Name	Status	Type of Presence
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding 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
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

Current Scientific Name	Status	Type of Presence
[Mesoplodon densirostris](#) Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
[Mesoplodon 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
[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

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Apollo	Multiple Use Zone (IUCN VI)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Aire River	Heritage River	VIC
Aire River W.R.	Natural Features Reserve	VIC
Bay of Islands Coastal Park	Conservation Park	VIC
Cape Nelson	State Park	VIC
Discovery Bay	Marine National Park	VIC
Discovery Bay Coastal Park	Conservation Park	VIC
Great Otway	National Park	VIC
Marengo N.C.R.	Nature Conservation Reserve	VIC
Marengo Reefs	Marine Sanctuary	VIC
Port Campbell	National Park	VIC
Princetown W.R	Natural Features Reserve	VIC
Stony Creek (Otways)	Reference Area	VIC
The Arches	Marine Sanctuary	VIC
Twelve Apostles	Marine National Park	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
West Victoria RFA	Victoria

Nationally Important Wetlands

[Resource Information]

Wetland Name	State
Lower Aire River Wetlands	VIC
Princetown Wetlands	VIC

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Cape Winds Offshore Windfarm Geophysical, Geotechnical and Marine Studies	2023/09629		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters	2024/09879		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters ? May 2025	2025/10138		Referral Decision
Geographe-A gas exploration well	2000/82		Completed
Hydrocarbon exploration wells	2003/1062		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed
Otway Astrolabe 3D Marine Seismic Survey, Otway Basin	2012/6421		Completed
SMAP telecommunications submarine cable installation	2024/09989		Completed
Southern Winds Offshore Wind Project	2022/09435		Completed
Southern Winds Offshore Wind Project Initial Marine Field Investigations	2022/09436		Completed
Spinifex Offshore Surveys	2022/09359		Completed
Spinifex Offshore Wind Farm - Offshore Investigations	2024/09918		Referral Decision
Strike Oil NL Seismic Surveys	2000/107		Completed
Thylacine-A Exploration Well	2000/81		Completed
Vic-P51 and Vic-P52 3D seismic survey	2002/799		Completed
Controlled action			
Alston-1 petroleum exploration well, permit VIC/P44	2003/1315	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval
Otway Development	2002/621	Controlled Action	Post-Approval
Residential Subdivision & Infrastructure Parish of Belfast	2005/1954	Controlled Action	Completed
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Strike Oil Gas Exploration Well, Otway Basin (VIC/P44)	2000/97	Controlled Action	Completed
Twelve Apostles Saddle Lookout	2019/8571	Controlled Action	Post-Approval
VIC Offshore Windfarm	2021/8966	Controlled Action	Assessment Approach
VICP61 2D Marine Seismic Survey	2008/4075	Controlled Action	Completed
Not controlled action			
Amrit-1 exploration well	2004/1572	Not Controlled Action	Completed
construction of pump station for pump diversion from the Barham River	2003/1242	Not Controlled Action	Completed
Drilling of Callister-1 exploration well in VIC/P51	2004/1633	Not Controlled Action	Completed
Enterprise 1 Exploration Drilling Program, near Port Campbell, Vic	2019/8438	Not Controlled Action	Completed
Exploration drilling for liquid/gaseous hydrocarbons	2004/1681	Not Controlled Action	Completed
Gas Field Development	2006/2635	Not Controlled Action	Completed
Gas Fields Development	2011/5879	Not Controlled Action	Completed
Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic	2015/7551	Not Controlled Action	Completed
Henry-1 Exploration Well, Petroleum Permit Area VIC/P44	2005/2147	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
Nirranda South Wind Farm Pty Ltd	2002/763	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed
Port Campbell Headland Walking Trail Realignment	2012/6676	Not Controlled Action	Completed
Residential/Resort/Golf Course development	2002/907	Not Controlled Action	Completed
Stage 1 residential subdivision, Anna Catherine Drive	2005/1992	Not Controlled Action	Completed
Track construction - Great Ocean Walk	2002/793	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Victorian Generator Project	2005/1984	Not Controlled Action	Completed
West Triton Drilling Program - Otway Basin	2007/3909	Not Controlled Action	Completed
Wind Farm Construction and Operation	2001/471	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2005/2295	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey, Petroleum Exploration Permit Area EPP27	2006/2776	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey in VIC/P50 and VIC/P46	2004/1810	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey VIC/P50	2005/2313	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
2D Siesmic Marine Survey	2008/4074	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey near King Island	2004/1461	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey within Torquay Sub-basin off sthn Victoria	2012/6256	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
Astrolabe 3D Marine Seismic Survey	2011/6048	Not Controlled Action (Particular Manner)	Post-Approval
Bernoulli 3D Seismic Survey	2006/3053	Not Controlled Action (Particular Manner)	Post-Approval
BHPBilliton Otway 3D Seismic Survey	2007/3443	Not Controlled Action (Particular Manner)	Post-Approval
Deepwater Sorell Basin 2001 Non-Exclusive 2D Seismic Survey	2001/156	Not Controlled Action (Particular Manner)	Post-Approval
Drill and Profile Exploration Well Somerset 1, License Area T34P	2009/5037	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
La Bella 3D Marine Seismic Survey, Otway Basin, VIC	2012/6683	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
OTE10 2D Marine Seismic Survey	2009/5223	Not Controlled Action (Particular Manner)	Post-Approval
Otway Basin Exploration Drilling Campaign, Vic	2011/6125	Not Controlled Action (Particular Manner)	Post-Approval
Santos 2D Seismic Survey VIC/P44 & VIC/P51	2003/1213	Not Controlled Action (Particular Manner)	Post-Approval
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval
Seismic Survey in Petroleum Permit Area EPP27	2002/648	Not Controlled Action (Particular Manner)	Post-Approval
Seismic Survey VIC-P46	2002/826	Not Controlled Action (Particular Manner)	Post-Approval
Speculant 3D Transition Zone Seismic Survey	2010/5558	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Torquay Sub-basin (VIC/P62) OTE12-3D Seismic Survey	2012/6655	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5700	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval
Vic-P51 and Vic-P52 2D seismic survey	2002/811	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D & 3D Seismic Surveys - Permit Area - VIC/P50	2008/4517	Referral Decision	Completed
3D Marine Seismic Survey	2011/6156	Referral Decision	Completed
3D Seismic Survey	2008/4014	Referral Decision	Completed
Portland Wave Energy Project	2008/3946	Referral Decision	Completed
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed
VICP61 2D Marine Seismic Survey	2008/3975	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
Bonney Coast Upwelling	South-east
West Tasmania Canyons	South-east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica		
Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris		
Short-tailed Shearwater [84292]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur
Morus serrator Australasian Gannet [1020]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	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]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high	Known to occur

Scientific Name	Behaviour	Presence
	use area)	
[Balaenoptera musculus brevicauda](#)		
Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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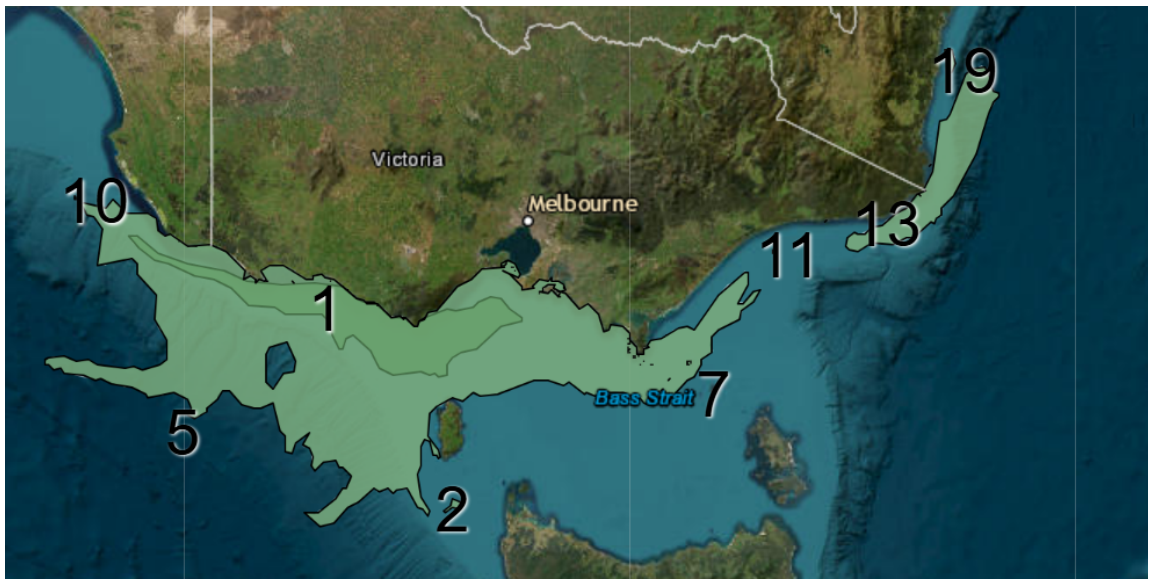
Appendix 5e – Monitoring Area PMST

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 22-Jul-2025

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements



Monitoring Area

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:	3
Wetlands of International Importance (Ramsar	6
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	19
Listed Threatened Species:	175
Listed Migratory Species:	85

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:	75
Commonwealth Heritage Places:	11
Listed Marine Species:	143
Whales and Other Cetaceans:	33
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	10
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:	171
Regional Forest Agreements:	5
Nationally Important Wetlands:	27
EPBC Act Referrals:	262
Key Ecological Features (Marine):	6
Biologically Important Areas:	45
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places		[Resource Information]
Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place
Point Nepean Defence Sites and Quarantine Station Area	VIC	Listed place
Quarantine Station and Surrounds	VIC	Within listed place

Wetlands of International Importance (Ramsar Wetlands)	[Resource Information]
Ramsar Site Name	Proximity
Corner inlet	Within Ramsar site
Glenelg estuary and discovery bay wetlands	Within Ramsar site
Lavinia	Within 10km of Ramsar site
Piccaninnie ponds karst wetlands	Within Ramsar site
Port phillip bay (western shoreline) and bellarine peninsula	Within Ramsar site
Western port	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
Assemblages of species associated with open-coast salt-wedge estuaries of western and central	Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Victoria ecological community		
Brogo Vine Forest of the South East Corner Bioregion	Endangered	Community may occur within area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered	Community known to occur within area
Illawarra and south coast lowland forest and woodland ecological community	Critically Endangered	Community may occur within area
Karst springs and associated alkaline fens of the Naracoorte Coastal Plain Bioregion	Endangered	Community likely to occur within area
King Island scrub complex	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 likely to occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community likely to occur within area
Natural Temperate Grassland of the Victorian Volcanic Plain	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
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)	Critically Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Tasmanian white gum (Eucalyptus viminalis) wet forest	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to 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		
Acanthiza pusilla magnirostris		
King Island Brown Thornbill, Brown Thornbill (King Island) [91709]	Endangered	Species or species habitat likely to occur within area
Acanthornis magna greeniana		
King Island Scrubtit, Scrubtit (King Island) [82329]	Critically Endangered	Species or species habitat likely to occur within area
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
Aphelocephala leucopsis		
Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area
Aquila audax fleayi		
Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Species or species habitat may occur within area
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Breeding known 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

Scientific Name	Threatened Category	Presence Text
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
Calyptorhynchus banksii graptogyne South-eastern Red-tailed Black-Cockatoo [25982]	Endangered	Foraging, feeding or related behaviour known to occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius 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 known to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Roosting 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	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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	Migration route 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

Scientific Name	Threatened Category	Presence Text
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Platycercus caledonicus brownii Green Rosella (King Island) [67041]	Vulnerable	Species or species habitat known 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	Breeding known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to 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 known to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area
Strepera fuliginosa colei Black Currawong (King Island) [67113]	Vulnerable	Breeding likely 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 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
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
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 bispinosus		
Glenelg Spiny Freshwater Crayfish, Pricklyback [81552]	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 likely to occur within area
Gadopsis sp. SWV		
Western Victorian Blackfish [90722]	Endangered	Species or species habitat likely to 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
Nannoperca obscura		
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Nannoperca variegata		
Variegated Pygmy Perch, Ewens Pygmy Perch, Golden Pygmy Perch [26178]	Vulnerable	Species or species habitat known 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
Seriolella brama		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
Heleioporus australiacus flavopunctatus		
Southern Owl Frog, Southern Giant Burrowing Frog [92014]	Endangered	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 known to occur within area
Mixophyes balbus		
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area
Uperoleia martini		
Martin's Toadlet [1873]	Endangered	Species or species habitat known to occur within area
INSECT		
Synemon plana		
Golden Sun Moth [25234]	Vulnerable	Species or species habitat may occur within area
MAMMAL		

Scientific Name	Threatened Category	Presence Text
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 known to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known 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	Breeding 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 known to occur within area
Miniopterus orianae bassanii		
Southern Bent-wing Bat [87645]	Critically Endangered	Breeding known to occur within area
Neophoca cinerea		
Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area
Perameles gunnii Victorian subspecies		
Eastern Barred Bandicoot (Mainland) [88020]	Endangered	Translocated population known to occur within area

Scientific Name	Threatened Category	Presence Text
Petauroides volans		
Greater Glider (southern and central) [254]	Endangered	Species or species habitat may 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
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area
Pseudomys shortridgei		
Heath Mouse, Dayang, Heath Rat [77]	Endangered	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
OTHER		
Hyridella glenelgensis		
Glenelg Freshwater Mussel [82953]	Critically Endangered	Species or species habitat may occur within area
PLANT		
Acacia constablei		
Narrabarba Wattle [10798]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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 known to occur within area
Astelia australiana Tall Astelia [10851]	Vulnerable	Species or species habitat may occur within area
Astrotricha sp. Howe Range (D.E.Albrecht 1054) Long-leaf Star-hair [85676]	Critically Endangered	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 likely to occur within area
Caladenia calcicola Limestone Spider-orchid [10065]	Vulnerable	Species or species habitat likely to occur within area
Caladenia colorata Coloured Spider-orchid, Small Western Spider-orchid, Painted Spider-orchid [54999]	Endangered	Species or species habitat known to occur within area
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area
Caladenia hastata Melblom's Spider-orchid [16118]	Endangered	Species or species habitat likely to occur within area
Caladenia insularis French Island Spider-orchid [24372]	Vulnerable	Species or species habitat known to occur within area
Caladenia orientalis Eastern Spider Orchid [83410]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Caladenia ornata Ornate Pink Fingers [76213]	Vulnerable	Species or species habitat known to occur within area
Caladenia robinsonii Frankston Spider-orchid [24375]	Endangered	Species or species habitat likely to occur within area
Caladenia tensa Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat may 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
Correa lawrenceana var. genoensis Genoa River Correa [66626]	Endangered	Species or species habitat may occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat known to occur within area
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 may occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area
Eucalyptus strzeleckii Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Euphrasia collina subsp. muelleri Purple Eyebright, Mueller's Eyebright [16151]	Endangered	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Grevillea infecunda Anglesea Grevillea [22026]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area
Hiya distans listed as Hypolepis distans Scrambling Ground-fern [92548]	Endangered	Species or species habitat likely to occur within area
Ixodia achillaeoides subsp. arenicola Sand Ixodia, Ixodia [21474]	Vulnerable	Species or species habitat known to occur within area
Lachnagrostis adamsonii Adamson's Blown-grass, Adamson's Blowngrass [76211]	Endangered	Species or species habitat may occur within area
Leiocarpa gatesii Wrinkled Buttons [76212]	Vulnerable	Species or species habitat known to occur within area
Lepidium aschersonii Spiny Peppercress [10976]	Vulnerable	Species or species habitat known to occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat known to occur within area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
Pimelea spinescens subsp. spinescens Plains Rice-flower, Spiny Rice-flower, Prickly Pimelea [21980]	Critically Endangered	Species or species habitat likely to occur within area
Pomaderris halmaturina subsp. halmaturina Kangaroo Island Pomaderris [21964]	Vulnerable	Species or species habitat known to occur within area
Pomaderris parrisiae Parris' Pomaderris [22119]	Vulnerable	Species or species habitat likely to occur within area
Prasophyllum diversiflorum Gorae Leek-orchid [13210]	Endangered	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 litorale listed as Prasophyllum littorale Coastal Leek Orchid [55234]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum suaveolens Fragrant Leek-orchid [64956]	Endangered	Species or species habitat may occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat known to occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area
Rutidosis leptorhynchoides Button Wrinklewort [67251]	Endangered	Species or species habitat may occur within area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat likely to occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known to occur within area
Spyridium cinereum Tiny Spyridium [13564]	Endangered	Species or species habitat known to occur within area
Taraxacum cygnorum Coast Dandelion, Native Dandelion [2508]	Vulnerable	Species or species habitat known 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]	Endangered	Species or species habitat known to occur within area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	Species or species habitat known to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat known to occur within area
REPTILE		

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour 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 likely 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
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
SHARK		
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Congregation or aggregation known to 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

Scientific Name	Threatened Category	Presence Text
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		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat known to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known 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

Scientific Name	Threatened Category	Presence Text
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
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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 carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known 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
Carcharias taurus Grey Nurse Shark [64469]		Congregation or aggregation known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	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

Scientific Name	Threatened Category	Presence Text
Eubalaena australis as Balaena glacialis australis		
Southern Right Whale [40]	Endangered	Breeding 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]		Foraging, feeding or related behaviour known to occur within area
Mobula birostris as Manta birostris		
Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	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		
Cuculus optatus		
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Roosting known to occur within area
Motacilla flava Yellow Wagtail [644]		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
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

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting 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 known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known 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
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
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 incana Wandering Tattler [831]		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
Defence	
Defence - CROWS NEST CAMP - QUEENSCLIFF [21028]	VIC
Defence - CROWS NEST CAMP - QUEENSCLIFF [21027]	VIC
Defence - CROWS NEST CAMP - QUEENSCLIFF [21026]	VIC
Defence - CROWS NEST CAMP - QUEENSCLIFF [21029]	VIC

Commonwealth Land Name	State
Defence - HMAS CERBERUS [20098]	VIC
Defence - HMAS CERBERUS [20090]	VIC
Defence - HMAS CERBERUS [20096]	VIC
Defence - HMAS CERBERUS [20093]	VIC
Defence - HMAS CERBERUS [20095]	VIC
Defence - HMAS CERBERUS [20094]	VIC
Defence - HMAS CERBERUS [20091]	VIC
Defence - HMAS CERBERUS [20097]	VIC
Defence - HMAS CERBERUS [20102]	VIC
Defence - HMAS CERBERUS [20104]	VIC
Defence - HMAS CERBERUS [20100]	VIC
Defence - HMAS CERBERUS [20101]	VIC
Defence - HMAS CERBERUS [20103]	VIC
Defence - HMAS CERBERUS [20099]	VIC
Defence - HMAS CERBERUS [20082]	VIC
Defence - HMAS CERBERUS [20086]	VIC
Defence - HMAS CERBERUS [20087]	VIC
Defence - HMAS CERBERUS [20083]	VIC
Defence - HMAS CERBERUS [20081]	VIC
Defence - HMAS CERBERUS [20089]	VIC
Defence - HMAS CERBERUS [20092]	VIC
Defence - HMAS CERBERUS [20085]	VIC
Defence - HMAS CERBERUS [20088]	VIC
Defence - HMAS CERBERUS [20080]	VIC
Defence - HMAS CERBERUS [20084]	VIC
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21034]	VIC
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21033]	VIC

Commonwealth Land Name	State
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21032]	VIC
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21030]	VIC
Defence - STAFF COLLEGE-FORT QUEENSCLIFF [21031]	VIC
Defence - SWAN ISLAND TRAINING AREA [21448]	VIC
Defence - SWAN ISLAND TRAINING AREA [21447]	VIC
Defence - SWAN ISLAND TRAINING AREA [21446]	VIC
Defence - TRAINING CENTRE (Norris Barracks) - Portsea [21025]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21008]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21012]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21009]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21017]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21023]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21022]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21024]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21021]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21020]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21019]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21013]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21011]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21010]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21016]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21014]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21015]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21018]	VIC
Defence - Training Depot, Darts RD 3305 Portland [21007]	VIC
Defence - WARRNAMBOOL TRAINING DEPOT [21111]	VIC
Defence - WEST HEAD GUNNERY RANGE [21112]	VIC

Commonwealth Land Name	State
Transport and Regional Services - Australian Maritime Safety Authority	
Commonwealth Land - Australian Maritime Safety Authority [41288]	SA
Commonwealth Land - Australian Maritime Safety Authority [41289]	SA
Unknown	
Commonwealth Land - [21489]	VIC
Commonwealth Land - [60114]	TAS
Commonwealth Land - [21488]	VIC
Commonwealth Land - [21496]	VIC
Commonwealth Land - [21498]	VIC
Commonwealth Land - [21490]	VIC
Commonwealth Land - [21492]	VIC
Commonwealth Land - [21497]	VIC
Commonwealth Land - [21491]	VIC
Commonwealth Land - [21570]	VIC
Commonwealth Land - [22391]	VIC
Commonwealth Land - [21509]	VIC
Commonwealth Land - [21582]	VIC
Commonwealth Land - [21583]	VIC
Commonwealth Land - [21487]	VIC

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Historic		
Cape Northumberland Lighthouse	SA	Listed place
Cape Wickham Lighthouse	TAS	Listed place
Fort Queenscliff	VIC	Listed place
Gabo Island Lighthouse	VIC	Listed place
HMAS Cerberus Central Area Group	VIC	Listed place
Montague Island Lighthouse	NSW	Listed place
Sorrento Post Office	VIC	Listed place

Name	State	Status
Swan Island Defence Precinct	VIC	Listed place
Wilsons Promontory Lighthouse	VIC	Listed place
Natural		
HMAS Cerberus Marine and Coastal Area	VIC	Listed place
Swan Island and Naval Waters	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
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat known to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known 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

Scientific Name	Threatened Category	Presence Text
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
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
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius 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
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

Scientific Name	Threatened Category	Presence Text
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting known 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	Roosting known to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area
Larus dominicanus Kelp Gull [809]		Breeding known to occur within 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
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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
Morus capensis Cape Gannet [59569]		Breeding known to occur within area
Morus serrator Australasian Gannet [1020]		Breeding known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding known to occur within area overfly marine area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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
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
Pelecanoides urinatrix Common Diving-Petrel [1018]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Phalaropus lobatus Red-necked Phalarope [838]		Roosting 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
Pterodroma macroptera Great-winged Petrel [1035]		Foraging, feeding or related behaviour known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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 known 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]	Vulnerable	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 incana as Heteroscelus incanus		
Wandering Tattler [831]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
[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		
[Acentronura australe](#) Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
[Acentronura tentaculata](#) Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
[Campichthys tryoni](#) Tryon's Pipefish [66193]		Species or species habitat may occur within area
[Cosmocampus howensis](#) Lord Howe Pipefish [66208]		Species or species habitat may occur within area
[Heraldia nocturna](#) 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

Scientific Name	Threatened Category	Presence Text
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
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 mollisoni Mollison's Pipefish [66260]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
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
Vanacampus vercoi Verco's Pipefish [66286]		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
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat 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 known to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Current Scientific Name	Status	Type of Presence
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	Breeding 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
Hyperoodon planifrons Southern Bottlenose Whale [71]		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]		Foraging, feeding or related behaviour known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon 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

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Apollo	Multiple Use Zone (IUCN VI)
Beagle	Multiple Use Zone (IUCN VI)
East Gippsland	Multiple Use Zone (IUCN VI)
Franklin	Multiple Use Zone (IUCN VI)
Zeehan	Multiple Use Zone (IUCN VI)
Beagle	National Park Zone (IUCN II)
Franklin	National Park Zone (IUCN II)
Nelson	National Park Zone (IUCN II)
Zeehan	National Park Zone (IUCN II)
Zeehan	Special Purpose Zone (IUCN VI)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Aire River	Heritage River	VIC
Aire River W.R.	Natural Features Reserve	VIC
Aireys Inlet B.R.	Natural Features Reserve	VIC
Anglesea B.R.	Natural Features Reserve	VIC
Anser Island	Reference Area	VIC
Baawang	Reference Area	VIC
Bald Hills B.R.	Natural Features Reserve	VIC
Balnarring G95 B.R.	Natural Features Reserve	VIC
Barham Paradise S.R.	Natural Features Reserve	VIC
Barunguba Montague Island	Nature Reserve	NSW
Barwon Bluff	Marine Sanctuary	VIC
Bass River SS.R.	Natural Features Reserve	VIC
Batemans	Marine Park	NSW
Bats Ridge W.R	Nature Conservation Reserve	VIC
Bay of Islands Coastal Park	Conservation Park	VIC
Bellarine I110 B.R.	Natural Features Reserve	VIC
Beowa	National Park	NSW
Beware Reef	Marine Sanctuary	VIC
Bolwarra H43 B.R.	Natural Features Reserve	VIC
Bolwarra H44 B.R.	Natural Features Reserve	VIC
Bolwarra H45 B.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Breamlea F.F.R.	Nature Conservation Reserve	VIC
Buckley N.C.R.	Natural Features Reserve	VIC
Bunurong	Marine National Park	VIC
Canunda	National Park	SA
Cape Conran Coastal Park	Conservation Park	VIC
Cape Howe	Wilderness Zone	VIC
Cape Howe	Marine National Park	VIC
Cape Liptrap Coastal Park	Conservation Park	VIC
Cape Nelson	State Park	VIC
Cape Patterson N.C.R	Natural Features Reserve	VIC
Cape Wickham	Conservation Area	TAS
Cape Wickham	State Reserve	TAS
Carpenter Rocks	Conservation Park	SA
Cataraqui Point	Conservation Area	TAS
Churchill Island	Marine National Park	VIC
Cone Islet	Conservation Area	TAS
Conewarre K47 SS.R.	Natural Features Reserve	VIC
Conewarre K48 SS.R.	Natural Features Reserve	VIC
Corner Inlet Marine and Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
Crib Point G228 B.R.	Natural Features Reserve	VIC
Crib Point G229 B.R.	Natural Features Reserve	VIC
Croajingolong	National Park	VIC
Curtis Island	Nature Reserve	TAS

Protected Area Name	Reserve Type	State
Devils Tower	Nature Reserve	TAS
Dingley Dell	Conservation Park	SA
Disappointment Bay	State Reserve	TAS
Discovery Bay	Marine National Park	VIC
Discovery Bay Coastal Park	Conservation Park	VIC
Douglas Point	Conservation Park	SA
Drakes B.R.	Natural Features Reserve	VIC
Dry Creek	Forest Reserve	SA
Eagle Rock	Marine Sanctuary	VIC
East Gippsland Coastal streams	Natural Catchment Area	VIC
East Moncoeur Island	Conservation Area	TAS
Edna Bowman N.C.R.	Natural Features Reserve	VIC
Ewens Ponds	Conservation Park	SA
Fingal B.R	Natural Features Reserve	VIC
Flinders G234 B.R.	Natural Features Reserve	VIC
Flinders N.F.R.	Natural Features Reserve	VIC
French Island	National Park	VIC
French Island (north)	Reference Area	VIC
French Island G230 B.R	Natural Features Reserve	VIC
Glenelg River	Heritage River	VIC
Goose Lagoon W.R	Natural Features Reserve	VIC
Gorae B.R.	Natural Features Reserve	VIC
Great Otway	National Park	VIC

Protected Area Name	Reserve Type	State
Hedditch Hill S.R.	Natural Features Reserve	VIC
Hogan Group	Conservation Area	TAS
Johanna Falls S.R.	Natural Features Reserve	VIC
Johnstones Creek F.R	Nature Conservation Reserve	VIC
Kangerong N.C.R	Natural Features Reserve	VIC
Kentbruck H14 B.R	Natural Features Reserve	VIC
Kentbruck H50 B.R.	Natural Features Reserve	VIC
Kent Group	National Park	TAS
Kilcunda N.C.R.	Natural Features Reserve	VIC
Lady Julia Percy Island W.R.	Nature Conservation Reserve	VIC
Lake Aringa W.R	Nature Conservation Reserve	VIC
Lake Connewarre W.R	Natural Features Reserve	VIC
Lake Gillear W.R	Natural Features Reserve	VIC
Latrobe B.R.	Natural Features Reserve	VIC
Lavinia	State Reserve	TAS
Lawrence Rocks W.R.	Nature Conservation Reserve	VIC
Lily Pond B.R.	Natural Features Reserve	VIC
Lonsdale Lakes W.R	Nature Conservation Reserve	VIC
Lower Glenelg	National Park	VIC
Lower Glenelg River	Conservation Park	SA
Lower South East	Marine Park	SA

Protected Area Name	Reserve Type	State
Main Ridge N.C.R.	Natural Features Reserve	VIC
Marengo N.C.R.	Nature Conservation Reserve	VIC
Marengo Reefs	Marine Sanctuary	VIC
Merri	Marine Sanctuary	VIC
Merricks Creek B.R.	Natural Features Reserve	VIC
Mornington Peninsula	National Park	VIC
Mount Richmond	National Park	VIC
Mount Vereker Creek	Natural Catchment Area	VIC
Mouzie B.R	Natural Features Reserve	VIC
Mouzie N.F.R	Natural Features Reserve	VIC
Mushroom Reef	Marine Sanctuary	VIC
Nadgee	Nature Reserve	NSW
Narrawong F.R.	Nature Conservation Reserve	VIC
Nelson SS.R.	Natural Features Reserve	VIC
Nene Valley	Conservation Park	SA
New Year Island	Game Reserve	TAS
Nooramunga Marine & Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
NOORAMUNGA STATE FAUNAL RESERVE	Nature Conservation Reserve	VIC
North East Islet	Nature Reserve	TAS
Painkalac Creek	Reference Area	VIC
Parker River	Reference Area	VIC
Phillip Island Nature Park	Other	VIC

Protected Area Name	Reserve Type	State
Piccaninnie Ponds	Conservation Park	SA
Point Addis	Marine National Park	VIC
Point Danger	Marine Sanctuary	VIC
Point Hicks	Marine National Park	VIC
Point Nepean	National Park	VIC
Port Campbell	National Park	VIC
Portland H46 B.R.	Natural Features Reserve	VIC
Portland H47 B.R.	Natural Features Reserve	VIC
Port Phillip Heads	Marine National Park	VIC
Princetown W.R	Natural Features Reserve	VIC
Queenscliff N.F.R	Natural Features Reserve	VIC
Rame Head	Remote and Natural Area - Schedule 6, National Parks Act	VIC
Reef Island and Bass River Mouth N.C.R	Natural Features Reserve	VIC
Rodondo Island	Nature Reserve	TAS
Salt Lagoon, St Leonards W.R	Nature Conservation Reserve	VIC
Sandpatch	Wilderness Zone	VIC
Seal Creek	Reference Area	VIC
Seal Islands W.R.	Nature Conservation Reserve	VIC
Seal Rocks	Conservation Area	TAS
Seal Rocks	State Reserve	TAS
Shallow Inlet Marine and Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
Southern Wilsons Promontory	Remote and Natural Area - Schedule 6, National Parks Act	VIC

Protected Area Name	Reserve Type	State
Stokes Point	Conservation Area	TAS
Stony Creek (Otways)	Reference Area	VIC
Sugarloaf Rock	Conservation Area	TAS
Swan Bay - Edwards Point W.R	Nature Conservation Reserve	VIC
The Arches	Marine Sanctuary	VIC
Tower Hill W.R	Natural Features Reserve	VIC
Trewalla H48 B.R.	Natural Features Reserve	VIC
Trewalla H49 B.R.	Natural Features Reserve	VIC
Twelve Apostles	Marine National Park	VIC
Tyrendarra F.R	Nature Conservation Reserve	VIC
Unnamed (No.HA1038)	Heritage Agreement	SA
Unnamed (No.HA1404)	Heritage Agreement	SA
Unnamed (No.HA1457)	Heritage Agreement	SA
Unnamed (No.HA42)	Heritage Agreement	SA
Unnamed (No.HA497)	Heritage Agreement	SA
Unnamed C0293	Private Nature Reserve	VIC
Unnamed P0176	Private Nature Reserve	VIC
Ventnor B.R.	Natural Features Reserve	VIC
Vereker Creek	Reference Area	VIC
Waratah B.R	Natural Features Reserve	VIC
West Moncoeur Island	Nature Reserve	TAS
Wild Dog B.R.	Natural Features Reserve	VIC
Wild Dog Creek SS.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Wilsons Promontory	National Park	VIC
Wilsons Promontory	Wilderness Zone	VIC
Wilsons Promontory	Marine National Park	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
Wilsons Promontory Marine Reserve	National Parks Act Schedule 4 park or reserve	VIC
Wongarra B.R.	Natural Features Reserve	VIC
Wonthaggi G237 B.R.	Natural Features Reserve	VIC
Wonthaggi G239 B.R.	Natural Features Reserve	VIC
Wonthaggi G240 B.R.	Natural Features Reserve	VIC
Wonthaggi G241 B.R.	Natural Features Reserve	VIC
Wonthaggi Wetlands Reserve	Natural Features Reserve	VIC
Yallock-Bulluk Marine and Coastal Park	National Parks Act Schedule 3 Other Parks	VIC
Yambuk F.F.R.	Nature Conservation Reserve	VIC
Yambuk Wetlands N.C.R.	Natural Features Reserve	VIC
Yanakie F.R	Nature Conservation 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

RFA Name	State
Eden RFA	New South Wales
Gippsland RFA	Victoria
Tasmania RFA	Tasmania
West Victoria RFA	Victoria

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Aire River	VIC
Anderson Inlet	VIC
Benedore River	VIC
Corner Inlet	VIC
Ewens Ponds	SA
Glenelg Estuary	VIC
Glenelg River	VIC
Lake Connewarre State Wildlife Reserve	VIC
Long Swamp	VIC
Lower Aire River Wetlands	VIC
Lower Merri River Wetlands	VIC
Mallacoota Inlet Wetlands	VIC
Mud Islands	VIC
Nadgee Lake and tributary wetlands	NSW
Pearshape Lagoon 1	TAS
Pearshape Lagoon 2	TAS
Pearshape Lagoon 3	TAS
Pearshape Lagoon 4	TAS
Piccaninnie Ponds	SA
Powlett River Mouth	VIC
Princetown Wetlands	VIC

Wetland Name	State
Shallow Inlet Marine & Coastal Park	VIC
Swan Bay & Swan Island	VIC
Thurra River	VIC
Tower Hill	VIC
Western Port	VIC
Yambuk Wetlands	VIC

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Apollo Bay to Skenes Creek Coastal Trail	2022/09274		Assessment
Aurora Green Offshore Wind Farm Preliminary Surveys	2024/09968		Completed
Barwon Heads Road Reserve Road to Lower Duneed Road Upgrade Project	2023/09724		Completed
Blue Mackerel North Offshore Wind Farm Marine Surveys	2024/09934		Completed
Blue Marlin Offshore Wind Energy Project	2023/09532		Completed
Cape Winds Offshore Windfarm Geophysical, Geotechnical and Marine Studies	2023/09629		Completed
City Of Greater Geelong Mosquito Control Program 2021-2030, Vic	2020/8782		Approval
Decommissioning of the Minerva Pipeline in Victorian state waters	2024/09879		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters ? May 2025	2025/10138		Referral Decision
Establishment of a 6 turbine windfarm near Wonthaggi	2002/820		Completed
Geographe-A gas exploration well	2000/82		Completed
Gippsland Dawn Offshore Wind Project Geophysical and Geotechnical Investigations	2024/10030		Referral Decision
Gippsland Offshore Wind Farm Marine Survey Investigations	2023/09682		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Gippsland Skies Offshore Wind Project marine surveys (investigations)	2024/09991		Referral Decision
Greater Gippsland Offshore Wind Project	2022/09379		Assessment
Greater Gippsland Offshore Wind Project Initial Marine Field Investigations	2022/09374		Completed
Great Ocean Road Coastal Trail (GORCT) ? Fairhaven to Grey River	2024/10073		Completed
Hydrocarbon exploration wells	2003/1062		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed
Navigator North Offshore Wind Farm ? Early Marine Survey Investigations	2024/10093		Referral Decision
Normanville Energy Park	2024/10070		Assessment
Offshore Tidal Energy Facility and Submarine Cable	2008/4480		Completed
Otway Astrolabe 3D Marine Seismic Survey, Otway Basin	2012/6421		Completed
Point Nepean Research & Education Field Station	2024/09963		Completed
Portland Energy Park	2024/09947		Assessment
Preliminary Site Investigations for Great Eastern Offshore Wind Project	2024/09890		Referral Decision
Seadragon Offshore Wind, Early Marine Surveys	2023/09670		Completed
SEA Gas Project transmission pipeline	2001/513		Completed
Shearwater 2D and 3D marine seismic survey	2005/2180		Completed
SMAP telecommunications submarine cable installation	2024/09989		Completed
South East Australia Carbon Capture and Storage Project, Commonwealth waters	2023/09732		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Southern Winds Offshore Wind Project	2022/09435		Completed
Southern Winds Offshore Wind Project Initial Marine Field Investigations	2022/09436		Completed
Spinifex Offshore Surveys	2022/09359		Completed
Spinifex Offshore Wind Farm - Offshore Investigations	2024/09918		Referral Decision
Strike Oil NL Seismic Surveys	2000/107		Completed
Thylacine-A Exploration Well	2000/81		Completed
Vic-P51 and Vic-P52 3D seismic survey	2002/799		Completed
Controlled action			
Alston-1 petroleum exploration well, permit VIC/P44	2003/1315	Controlled Action	Post-Approval
Bald Hills Wind Farm 80 Turbines	2002/730	Controlled Action	Post-Approval
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval
Crib Point to Pakenham Gas Pipeline, Vic	2018/8297	Controlled Action	Completed
Establishment of plantation for use of effluent water	2003/1063	Controlled Action	Completed
Gas Import Facility, Crib Point, Vic	2018/8298	Controlled Action	Completed
Glenelg Dolomite Quarry	2017/8021	Controlled Action	Post-Approval
Green Point Wind Farm	2001/529	Controlled Action	Post-Approval
Kentbruck Green Power Hub, Vic	2019/8510	Controlled Action	Assessment Approach
Lonsdale Golf Club Redevelopment	2003/969	Controlled Action	Post-Approval
Lorne Golf Course redevelopment	2004/1513	Controlled Action	Post-Approval
Mosquito Control	2005/2132	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Otway Development	2002/621	Controlled Action	Post-Approval
Pacific Hydro (Portland) Wind Farm SW Victoria	2000/18	Controlled Action	Post-Approval
Pelican Point residential subdivision	2006/2529	Controlled Action	Completed
Port Phillip Bay Channel Deepening	2002/576	Controlled Action	Post-Approval
Redevelopment of post office and construction of dwellings	2007/3639	Controlled Action	Completed
Residential and Golf Course Development Project	2003/1144	Controlled Action	Post-Approval
Residential Subdivision & Infrastructure Parish of Belfast	2005/1954	Controlled Action	Completed
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Star of the South Offshore Wind Farm Project	2020/8650	Controlled Action	Guidelines Issued
Strike Oil Gas Exploration Well, Otway Basin (VIC/P44)	2000/97	Controlled Action	Completed
Twelve Apostles Saddle Lookout	2019/8571	Controlled Action	Post-Approval
VIC Offshore Windfarm	2021/8966	Controlled Action	Assessment Approach
VICP61 2D Marine Seismic Survey	2008/4075	Controlled Action	Completed
Victorian Desalination Project, Bass Coast	2008/3948	Controlled Action	Post-Approval
Wind Turbines	2001/439	Controlled Action	Completed
Yolla Gas Field (TRL1) Development	2001/321	Controlled Action	Post-Approval
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
accomodation units and associatedadministration and recreational facilities	2001/430	Not Controlled Action	Completed
Airey Inlet water reclamation plant to Anglesea sewerage system	2006/2539	Not Controlled Action	Completed
Allendale wind farm	2007/3549	Not Controlled Action	Completed
Alteration of Grass Maintenance Regime within Powling St Wetlands	2012/6527	Not Controlled Action	Completed
Amrit-1 exploration well	2004/1572	Not Controlled Action	Completed
Anglesea Mine South Wall Vegetation removal, Anglesea, Vic	2017/8060	Not Controlled Action	Completed
Apollo Bay Water Storage Basin, VIC	2012/6484	Not Controlled Action	Completed
Aquacullture facility for rainbow trout and yabbies and recreational facilities	2002/822	Not Controlled Action	Completed
Barwon Heads Rd gas pipeline installation	2006/2769	Not Controlled Action	Completed
Barwon Heads Stormwater Outfall upgrade, Victoria	2016/7650	Not Controlled Action	Completed
Biodiversity Impacts Audit	2011/6191	Not Controlled Action	Completed
Bluff Heights Estate Stages 2 to 4	2003/1047	Not Controlled Action	Completed
Boneo Park Equestrian Centre	2008/4639	Not Controlled Action	Completed
CO2 geosequestration - Otway Basin Pilot Project	2006/2699	Not Controlled Action	Completed
Communications tower extension	2003/1099	Not Controlled Action	Completed
Construct a Recycled Water Pipeline from Somers Treatment Plant to Blue Scope S	2009/4982	Not Controlled Action	Completed
Construction and operation of Barwon Water biosolids treatment facility	2008/4345	Not Controlled Action	Completed
Construction of a flexi mat boat ramp	2011/5838	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Construction of an ocean access boat ramp at Bastion Point	2004/1407	Not Controlled Action	Completed
Construction of Barwon Heads Bridge	2005/2375	Not Controlled Action	Completed
Construction of Infrastructure to Extract, Treat & Transfer Groundwater to Wurde	2008/4104	Not Controlled Action	Completed
Construction of Overtaking Lanes on Great Ocean Rd	2008/4044	Not Controlled Action	Completed
construction of pump station for pump diversion from the Barham River	2003/1242	Not Controlled Action	Completed
Construction of the Edgars Road Extension, from Childs Road, Lalor to Cooper Street, Epping	2003/1135	Not Controlled Action	Completed
Cowes Primary School Gymnasium	2020/8683	Not Controlled Action	Completed
Development of Pt Nepean Quarantine Station (former) National Centre for Coasts and Climate	2008/4653	Not Controlled Action	Completed
Divestment of Norris Barracks	2003/963	Not Controlled Action	Completed
Dredging of Tuross Lake channel and depositon of spoil in lake	2004/1554	Not Controlled Action	Completed
Drilling of Callister-1 exploration well in VIC/P51	2004/1633	Not Controlled Action	Completed
Eight Mile Creek Drainage Works, Peacocks Road, Eight Mile Creek, SA	2014/7170	Not Controlled Action	Completed
Enterprise 1 Exploration Drilling Program, near Port Campbell, Vic	2019/8438	Not Controlled Action	Completed
Exploration drilling for liquid/gaseous hydrocarbons	2004/1681	Not Controlled Action	Completed
Fabrication and Spooling of Pipe Strings at Crib Point	2008/4127	Not Controlled Action	Completed
Ferry Service Infrastructure Development	2001/269	Not Controlled Action	Completed
Flinders Backlog Sewer Project	2005/2275	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Gas Field Development	2006/2635	Not Controlled Action	Completed
Gas Fields Development	2011/5879	Not Controlled Action	Completed
Gas Pipeline Installation	2005/2495	Not Controlled Action	Completed
Gippsland Basin Seismic Programme	2004/1866	Not Controlled Action	Completed
Gleneig Spiny Crayfish Habitat Rehabilitation	2011/6164	Not Controlled Action	Completed
Golflinks Road Residential Development & Water Storage Facility at Barwon Heads	2004/1793	Not Controlled Action	Completed
Grevillea infecunda tip cuttings and soil samples	2005/1979	Not Controlled Action	Completed
Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic	2015/7551	Not Controlled Action	Completed
Hemingway1/Oil Exploration	2001/177	Not Controlled Action	Completed
Henry-1 Exploration Well, Petroleum Permit Area VIC/P44	2005/2147	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Installation of a 35 metre telecommunications facility at Jirrahlinga Animal San	2003/1151	Not Controlled Action	Completed
Installation of optic fibre cable from Inverloch, Victoria to Stanley, Tasmania	2002/906	Not Controlled Action	Completed
Kelly Swamp Boardwalk Construction	2010/5371	Not Controlled Action	Completed
Kipper Tuna Turrum Project Maintenance Dredging	2010/5430	Not Controlled Action	Completed
Kongorong Wind Farm	2002/568	Not Controlled Action	Completed
Lot 5 Pelican Point Road, Pelican Point SA - Proposed New Dwelling	2021/9011	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Maintenance and priority works to heritage buildings at Point Nepean Quarantine	2006/3151	Not Controlled Action	Completed
Maintenance dredging of Yaringa Channel	2004/1360	Not Controlled Action	Completed
Maintenance Dredging South Channel 2012	2011/6198	Not Controlled Action	Completed
Maintenance of Access Track and Weed Removal	2009/4973	Not Controlled Action	Completed
Maintenance works at Barwon Heads Bridge	2003/1199	Not Controlled Action	Completed
Marine and Freshwater Resources Institute (MAFRI) Facility	2000/121	Not Controlled Action	Completed
Melville 1 Oil Exploration Well	2001/167	Not Controlled Action	Completed
Merricks Beach Backlog Sewer Project	2010/5300	Not Controlled Action	Completed
Minerva Cut Back Project, Vic	2017/8036	Not Controlled Action	Completed
Newfield wind farm	2007/3226	Not Controlled Action	Completed
Newhaven Yacht Squadron marina extension	2004/1450	Not Controlled Action	Completed
Nirranda South Wind Farm Pty Ltd	2002/763	Not Controlled Action	Completed
Northright-1 Exploration Well	2001/209	Not Controlled Action	Completed
Ocean Grove rising main 2 upgrade	2009/4978	Not Controlled Action	Completed
Ocean Grove Rising Main 2 Upgrade (OGRM2) - East Section & River Crossing	2010/5508	Not Controlled Action	Completed
Oceanlinx South Australia 1mW Greenwave Project	2012/6528	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed
Offshore Petroleum Exploration	2001/289	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Optic fibre cable installation - San Remo to Cowes	2005/2386	Not Controlled Action	Completed
Piccaninnie Ponds flow path restoration project, SA	2013/6711	Not Controlled Action	Completed
Pipeline easement regrowth removal	2011/5817	Not Controlled Action	Completed
Point Nepean Quarantine Station (former)/Restoration of Medical Superintendent's	2006/3149	Not Controlled Action	Completed
Port Campbell Headland Walking Trail Realignment	2012/6676	Not Controlled Action	Completed
Portland Landfill Borehole Installation, Vic	2017/7886	Not Controlled Action	Completed
Port Phillip Channel Deepening Project - Trial Dredge Program	2005/2164	Not Controlled Action	Completed
Proposed replacement of existing road culvert	2013/7077	Not Controlled Action	Completed
Queenscliff Harbour Redevelopment	2004/1352	Not Controlled Action	Completed
Railway Bridge (H0151) Partial Demolition, Merri River	2010/5534	Not Controlled Action	Completed
Redevelopment Project to Upgrade and Extend the Portland Trawler Wharf	2008/4317	Not Controlled Action	Completed
Rehabilitation of Lake Connewarre State Game Reserve	2002/708	Not Controlled Action	Completed
Remedial Works to the Swan Island Bridge	2003/1129	Not Controlled Action	Completed
Replacement of sewer pipelines	2002/623	Not Controlled Action	Completed
Residential/Resort/Golf Course development	2002/907	Not Controlled Action	Completed
Residential Development, 409 The Esplanade, St Leonards	2006/2950	Not Controlled Action	Completed
Residential Dwelling	2004/1896	Not Controlled Action	Completed
Ryan Corner Wind Farm	2005/2142	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Sole-2 appraisal gas well, VIC/RL3	2002/636	Not Controlled Action	Completed
Sole gas field development	2003/937	Not Controlled Action	Completed
Stage 1 residential subdivision, Anna Catherine Drive	2005/1992	Not Controlled Action	Completed
St Quentin Consulting Pty Ltd /Residential development/305 Great Ocean Road, Jan Juc/VIC/Development	2014/7184	Not Controlled Action	Completed
Telstra optic fibre cable across Bass Strait - Sub bottom profiler Surve	2002/779	Not Controlled Action	Completed
To construct a shared trail within the Arthurs Seat Road, road reserve south side from Mornington Fl	2004/1565	Not Controlled Action	Completed
Torquay Sewerage Strategy - pipe replacement between Torquay and the Black Rock	2004/1704	Not Controlled Action	Completed
Track construction - Great Ocean Walk	2002/793	Not Controlled Action	Completed
Transfer of 90ha Point Nepean Quarantine Station from Commonwealth to Victorian	2008/4521	Not Controlled Action	Completed
Upgrade and Repairs to Flinders Pier	2008/4331	Not Controlled Action	Completed
Venus Bay Outfall Extension	2004/1555	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Victorian Generator Project	2005/1984	Not Controlled Action	Completed
West Triton Drilling Program - Gippsland Basin	2007/3915	Not Controlled Action	Completed
West Triton Drilling Program - Otway Basin	2007/3909	Not Controlled Action	Completed
Wind Farm Construction and Operation	2001/471	Not Controlled Action	Completed
Not controlled action (particular manner)			

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2005/2295	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey, EPP33	2004/1794	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey in Permit Areas T/32P and T/33P	2002/845	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey	2008/3962	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey	2003/1214	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey, Petroleum Exploration Permit Area EPP27	2006/2776	Not Controlled Action (Particular Manner)	Post-Approval
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 in VIC/P50 and VIC/P46	2004/1810	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey Program in Bass Strait	2008/4040	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey VIC/P50	2005/2313	Not Controlled Action (Particular Manner)	Post-Approval
2D Siesmic Marine Survey	2008/4074	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
3D marine seismic survey near King Island	2004/1461	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey within Torquay Sub-basin off sthn Victoria	2012/6256	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
Apache 3D seismic exploration survey	2006/3146	Not Controlled Action (Particular Manner)	Post-Approval
Aroo Chappell 3D seismic survey	2010/5701	Not Controlled Action (Particular Manner)	Post-Approval
Astrolabe 3D Marine Seismic Survey	2011/6048	Not Controlled Action (Particular Manner)	Post-Approval
Barwon Heads Rising Main No.11 Sewerage Pipe Upgrade	2008/4091	Not Controlled Action (Particular Manner)	Post-Approval
Bass Basin 2D and 3D seismic surveys (T/38P & T/37P)	2007/3650	Not Controlled Action (Particular Manner)	Post-Approval
Benbows Paddock residential development, Cape Bridgewater	2007/3247	Not Controlled Action (Particular Manner)	Post-Approval
Bernoulli 3D Seismic Survey	2006/3053	Not Controlled Action (Particular Manner)	Post-Approval
BHPBilliton Otway 3D Seismic Survey	2007/3443	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Bitumen Storage Facility	2007/3676	Not Controlled Action (Particular Manner)	Post-Approval
Bream 3D seismic survey	2006/2556	Not Controlled Action (Particular Manner)	Post-Approval
Construction of bridge across Barwon River	2006/2947	Not Controlled Action (Particular Manner)	Post-Approval
Construct private dwelling	2008/4234	Not Controlled Action (Particular Manner)	Post-Approval
Construct single dwelling	2008/4504	Not Controlled Action (Particular Manner)	Post-Approval
Controlled Burn, Understorey Clearance and Removal of UXO	2003/1030	Not Controlled Action (Particular Manner)	Post-Approval
Deepwater Sorell Basin 2001 Non-Exclusive 2D Seismic Survey	2001/156	Not Controlled Action (Particular Manner)	Post-Approval
Drill and Profile Exploration Well Somerset 1, License Area T34P	2009/5037	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
Exploration drilling of the Craigow-1 and Tolpuddle-1 wells	2010/5725	Not Controlled Action (Particular Manner)	Post-Approval
Fuelbreak construction	2009/4915	Not Controlled Action (Particular Manner)	Post-Approval
Gas Pipeline	2000/20	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Geelong Bypass Section 3	2005/2099	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
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
Labatt 3D Seismic Survey T/47P Bass Strait	2007/3759	Not Controlled Action (Particular Manner)	Post-Approval
La Bella 3D Marine Seismic Survey, Otway Basin, VIC	2012/6683	Not Controlled Action (Particular Manner)	Post-Approval
Maintenance Dredging Program 2012-21 in Port of Melbourne	2012/6332	Not Controlled Action (Particular Manner)	Post-Approval
Northern Fields 3D Seismic Survey	2001/140	Not Controlled Action (Particular Manner)	Post-Approval
OTE10 2D Marine Seismic Survey	2009/5223	Not Controlled Action (Particular Manner)	Post-Approval
Otway Basin Exploration Drilling Campaign, Vic	2011/6125	Not Controlled Action (Particular Manner)	Post-Approval
Residential Development and Associated Infrastructure at Port Fairy	2012/6687	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Santos 2D Seismic Survey VIC/P44 & VIC/P51	2003/1213	Not Controlled Action (Particular Manner)	Post-Approval
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	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
Seismic Survey in Petroleum Permit Area EPP27	2002/648	Not Controlled Action (Particular Manner)	Post-Approval
Seismic Survey VIC-P46	2002/826	Not Controlled Action (Particular Manner)	Post-Approval
Shaw River Power Station construct gas pipeline and associated infrastructure	2009/5089	Not Controlled Action (Particular Manner)	Post-Approval
Shaw River Power Station Project - Water Supply Pipeline	2009/5091	Not Controlled Action (Particular Manner)	Post-Approval
Southern Flanks 2D Marine Seismic Survey	2010/5288	Not Controlled Action (Particular Manner)	Post-Approval
Southern Gas Pipeline Project	2002/619	Not Controlled Action (Particular Manner)	Post-Approval
Southern Margins 3D Seismic Survey VIC/P55	2007/3780	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Southern Margins T/35P and T/36P 3D Seismic Surveys	2007/3817	Not Controlled Action (Particular Manner)	Post-Approval
Speculant 3D Transition Zone Seismic Survey	2010/5558	Not Controlled Action (Particular Manner)	Post-Approval
Surface Geochemical Exploration Program, TAS	2010/5780	Not Controlled Action (Particular Manner)	Post-Approval
Tap Oil Ltd Molson 2D Seismic Survey T47P	2008/3967	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Torquay Sub-basin (VIC/P62) OTE12-3D Seismic Survey	2012/6655	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5700	Not Controlled Action (Particular Manner)	Post-Approval
Vegetation clearance and residential subdivision near Mt Gambier	2004/1370	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval
Vic-P51 and Vic-P52 2D seismic survey	2002/811	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Wolseley 3D seismic acquisition survey	2010/5703	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D & 3D Seismic Surveys - Permit Area - VIC/P50	2008/4517	Referral Decision	Completed
2D Seismic Survey	2008/3978	Referral Decision	Completed
3D Marine Seismic Survey	2011/6156	Referral Decision	Completed
3D Seismic Survey	2008/4014	Referral Decision	Completed
8 Lot Industrial Subdivision	2008/4527	Referral Decision	Completed
All actions taken in response to the current severe bushfires in Victoria.	2009/4787	Referral Decision	Completed
Alteration Reconstruction Restoration and Repairs to Buildings	2008/4179	Referral Decision	Completed
Beardie-1 Field wildcat oil well	2001/469	Referral Decision	Completed
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed
Portland Wave Energy Project	2008/3946	Referral Decision	Completed
Residential Development Elizabeth Avenue, Rosebud West, VIC	2015/7603	Referral Decision	Completed
Shark 3D Seismic Survey	2007/3294	Referral Decision	Completed
Stanton 3D Marine Seismic Survey	2013/6764	Referral Decision	Completed
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed
Upgrade of Services Infrastructure Point Nepean Quarantine Station	2008/4591	Referral Decision	Completed
VICP61 2D Marine Seismic Survey	2008/3975	Referral Decision	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
Wind Farm	2001/139	Referral Decision	Completed
Wolseley 3D Seismic Acquisition Survey in Permit T/32P	2010/5291	Referral Decision	Completed
Works to the buildings and surrounds at the former Point Nepean Quarantine Stati	2008/4156	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
Big Horseshoe Canyon	South-east
Bonney Coast Upwelling	South-east
Canyons on the eastern continental slope	Temperate east
Shelf rocky reefs	Temperate east
Upwelling East of Eden	South-east
West Tasmania Canyons	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 carneipes		
Flesh-footed Shearwater [82404]	Foraging	Known to occur
Ardenna grisea		
Sooty Shearwater [82651]	Breeding	Known to occur
Ardenna grisea		
Sooty Shearwater [82651]	Foraging	Likely to occur
Ardenna pacifica		
Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardenna tenuirostris		
Short-tailed Shearwater [84292]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Ardenna tenuirostris Short-tailed Shearwater [82652]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Likely to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	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	Likely to occur
Eudyptula minor Little Penguin [1085]	Breeding	Known to occur
Eudyptula minor Little Penguin [1085]	Foraging	Known to occur
Macronectes giganteus Southern Giant Petrel [1060]	Foraging	Known to occur
Macronectes halli Northern Giant Petrel [1061]	Foraging	Known to occur
Morus serrator Australasian Gannet [1020]	Aggregation	Known to occur
Morus serrator Australasian Gannet [1020]	Foraging	Known to occur
Oceanites oceanites Wilsons Storm Petrel [1034]	Migration	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Breeding	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Known to occur
Procellaria parkinsoni Black Petrel [1048]	Foraging	Likely to occur
Pterodroma macroptera Great-winged Petrel [1035]	Foraging	Likely to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur
Thalassarche cauta steadi White-capped Albatross [82344]	Foraging	Known 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
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Likely to occur
Thalasseus bergii Crested Tern [83000]	Breeding	Known to occur
Thalasseus bergii Crested Tern [83000]	Foraging	Likely to occur

Scientific Name	Behaviour	Presence
Seals		
Neophoca cinerea Australian Sea Lion [22]	Foraging (male)	Known to occur
Sharks		
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur
Carcharias taurus Grey Nurse Shark [64469]	Migration	Known to occur
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
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur

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 is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix 5f – Noise EMBA PMST

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: 31-Jul-2025

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements

Figure: Noise EMBA

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:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	80
Listed Migratory Species:	51

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:	87
Whales and Other Cetaceans:	14
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:	2
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	23
Key Ecological Features (Marine):	None
Biologically Important Areas:	10
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

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
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to 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 may occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	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

Scientific Name	Threatened Category	Presence Text
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may 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 may 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 may 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
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
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may 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 may occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
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 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
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 likely to occur within area
FISH		

Scientific Name	Threatened Category	Presence Text
[Nannoperca obscura](#)		
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat may occur within area
[Prototroctes maraena](#)		
Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
[Seriolella brama](#)		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
[Litoria raniformis](#)		
Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat likely 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	Foraging, feeding or related behaviour known to occur within area
[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 may occur within area
[Eubalaena australis](#)		
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Miniopterus orianae bassanii		
Southern Bent-wing Bat [87645]	Critically Endangered	Species or species habitat likely to occur within area
Petaurus australis australis		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area
Potorous tridactylus trisulcatus		
Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
PLANT		
Amphibromus fluitans		
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Glycine latrobeana		
Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area
Haloragis exalata subsp. exalata		
Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area
Lepidium aschersonii		
Spiny Peppercress [10976]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known 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 likely to occur within area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Lissolepis coventryi		
Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat likely to occur within area
SHARK		
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Migration route known to occur within area
Galeorhinus galeus		
School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	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
Ardenna grisea		
Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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

Scientific Name	Threatened Category	Presence Text
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]	Vulnerable	Species or species habitat may occur within area
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

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
Migratory Marine Species		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known 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 may occur within area
Carcharias taurus		
Grey Nurse Shark [64469]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Migration route known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding 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	Breeding 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
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 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 likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	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
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text
[Numenius madagascariensis](#)		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
[Numenius minutus](#)		
Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
[Pandion haliaetus](#)		
Osprey [952]		Species or species habitat likely to occur within area
[Tringa nebularia](#)		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

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 may occur within area
[Ardenna tenuirostris as Puffinus tenuirostris](#)		
Short-tailed Shearwater [82652]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
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
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		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 overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
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	Migration route likely 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
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely 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
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may 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 as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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 nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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
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
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

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
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]		Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding 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	Breeding 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

Current Scientific Name	Status	Type of Presence
[Balaenoptera borealis](#) Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known 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 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
[Lagenorhynchus obscurus](#) Dusky Dolphin [43]		Species or species habitat may occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]		Species or species habitat likely to occur within area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
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

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Bay of Islands Coastal Park	Conservation Park	VIC
Port Campbell	National Park	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
West Victoria RFA	Victoria

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Decommissioning of the Minerva Pipeline in Victorian state waters	2024/09879		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters ? May 2025	2025/10138		Referral Decision
Strike Oil NL Seismic Surveys	2000/107		Completed
Controlled action			
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval
Otway Development	2002/621	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Not controlled action			
Exploration drilling for liquid/gaseous hydrocarbons	2004/1681	Not Controlled Action	Completed
Gas Field Development	2006/2635	Not Controlled Action	Completed
Henry-1 Exploration Well, Petroleum Permit Area VIC/P44	2005/2147	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	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
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

Scientific Name	Behaviour	Presence
Thalassarche melanophris impavida		
Campbell Albatross [82449]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda		
Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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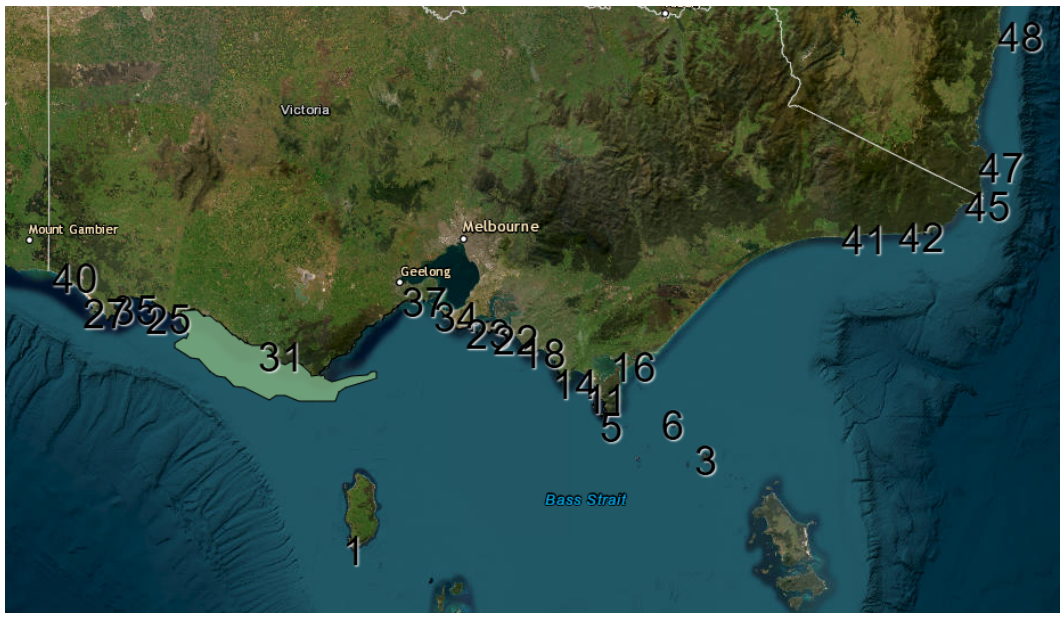
Appendix 5g – Social EMBA PMST

Australian Government

Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.



Report created: 26-Aug-2025

Summary

Details

- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat

Acknowledgements

Social EMBA

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:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	7
Listed Threatened Species:	98
Listed Migratory Species:	64

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:	None
Listed Marine Species:	108
Whales and Other Cetaceans:	28
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	18
Regional Forest Agreements:	1
Nationally Important Wetlands:	3
EPBC Act Referrals:	64
Key Ecological Features (Marine):	1
Biologically Important Areas:	16
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

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
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered	Community likely to occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community likely to occur within area
Natural Temperate Grassland of the Victorian Volcanic Plain	Critically Endangered	Community may occur within area
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 likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text
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
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 may 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

Scientific Name	Threatened Category	Presence Text
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
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
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
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to 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
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
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

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
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
CRUSTACEAN		
Euastacus bispinosus		
Glenelg Spiny Freshwater Crayfish, Pricklyback [81552]	Endangered	Species or species habitat likely to occur within area
FISH		
Hoplostethus atlanticus		
Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
Nannoperca obscura		
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat likely to occur within area
Prototroctes maraena		
Australian Grayling [26179]	Vulnerable	Species or species habitat known 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
FROG		
[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
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 known to occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known 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	Breeding 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 known to occur within area
[Miniopterus orianae bassanii](#) Southern Bent-wing Bat [87645]	Critically Endangered	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	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
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
PLANT		
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area
Eucalyptus strzeleckii Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Grevillea infecunda Anglesea Grevillea [22026]	Vulnerable	Species or species habitat likely to occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area
Leiocarpa gatesii Wrinkled Buttons [76212]	Vulnerable	Species or species habitat known to occur within area
Lepidium aschersonii Spiny Peppercress [10976]	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 known to occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum suaveolens Fragrant Leek-orchid [64956]	Endangered	Species or species habitat may occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat known to occur within area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Endangered	Species or species habitat known to occur within area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may 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	Species or species habitat known to occur within area
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Centrophorus uyato Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	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
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may 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

Scientific Name	Threatened Category	Presence Text
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]	Vulnerable	Species or species habitat may occur within area
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 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
Migratory Marine Species		
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 known to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caperea marginata		
Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharias taurus		
Grey Nurse Shark [64469]		Species or species habitat may occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eubalaena australis as Balaena glacialis australis		
Southern Right Whale [40]	Endangered	Breeding 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
Migratory Terrestrial Species		
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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 ruficollis Red-necked Stint [860]		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 likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting 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

Scientific Name	Threatened Category	Presence Text
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
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
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

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Defence	
Defence - WARRNAMBOOL TRAINING DEPOT [21111]	VIC
Unknown	
Commonwealth Land - [21492]	VIC
Commonwealth Land - [21583]	VIC

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
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area overfly marine 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 may 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

Scientific Name	Threatened Category	Presence Text
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
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 ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat 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 likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius ruficapillus Red-capped Plover [881]		Roosting 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 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
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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
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
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
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

Scientific Name	Threatened Category	Presence Text
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding 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
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
Phalacrocorax fuscescens Black-faced Cormorant [59660]		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

Scientific Name	Threatened Category	Presence Text
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	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 known to occur within area overfly marine 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
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may 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 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

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
[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
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		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

Scientific Name	Threatened Category	Presence Text
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 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 mollisoni Mollison's Pipefish [66260]		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

Scientific Name	Threatened Category	Presence Text
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
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
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 likely to occur within area
Neophoca cinerea		
Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptile		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding 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 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 known to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Current Scientific Name	Status	Type of Presence
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	Breeding 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
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
[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 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
[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

Current Scientific Name	Status	Type of Presence
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Apollo	Multiple Use Zone (IUCN VI)

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Aire River	Heritage River	VIC
Aire River W.R.	Natural Features Reserve	VIC
Bay of Islands Coastal Park	Conservation Park	VIC
Eagle Rock	Marine Sanctuary	VIC
Great Otway	National Park	VIC
Lake Gillear W.R	Natural Features Reserve	VIC
Lily Pond B.R.	Natural Features Reserve	VIC
Marengo N.C.R.	Nature Conservation Reserve	VIC
Marengo Reefs	Marine Sanctuary	VIC
Merri	Marine Sanctuary	VIC
Port Campbell	National Park	VIC
Princetown W.R	Natural Features Reserve	VIC
Stony Creek (Otways)	Reference Area	VIC
The Arches	Marine Sanctuary	VIC
Twelve Apostles	Marine National Park	VIC
Unnamed P0176	Private Nature Reserve	VIC
Wild Dog Creek SS.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Yambuk F.F.R.	Nature Conservation 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
West Victoria RFA	Victoria

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Lower Aire River Wetlands	VIC
Lower Merri River Wetlands	VIC
Princetown Wetlands	VIC

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Apollo Bay to Skenes Creek Coastal Trail	2022/09274		Assessment
Decommissioning of the Minerva Pipeline in Victorian state waters	2024/09879		Completed
Decommissioning of the Minerva Pipeline in Victorian state waters ? May 2025	2025/10138		Referral Decision
Great Ocean Road Coastal Trail (GORCT) ? Fairhaven to Grey River	2024/10073		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed
SMAP telecommunications submarine cable installation	2024/09989		Completed
Spinifex Offshore Wind Farm - Offshore Investigations	2024/09918		Referral Decision
Strike Oil NL Seismic Surveys	2000/107		Completed
Controlled action			
Alston-1 petroleum exploration well, permit VIC/P44	2003/1315	Controlled Action	Post-Approval
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Establishment of plantation for use of effluent water	2003/1063	Controlled Action	Completed
Lorne Golf Course redevelopment	2004/1513	Controlled Action	Post-Approval
Otway Development	2002/621	Controlled Action	Post-Approval
Residential Subdivision & Infrastructure Parish of Belfast	2005/1954	Controlled Action	Completed
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Strike Oil Gas Exploration Well, Otway Basin (VIC/P44)	2000/97	Controlled Action	Completed
Twelve Apostles Saddle Lookout	2019/8571	Controlled Action	Post-Approval
VICP61 2D Marine Seismic Survey	2008/4075	Controlled Action	Completed
Not controlled action			
Airey Inlet water reclamation plant to Anglesea sewerage system	2006/2539	Not Controlled Action	Completed
construction of pump station for pump diversion from the Barham River	2003/1242	Not Controlled Action	Completed
Enterprise 1 Exploration Drilling Program, near Port Campbell, Vic	2019/8438	Not Controlled Action	Completed
Exploration drilling for liquid/gaseous hydrocarbons	2004/1681	Not Controlled Action	Completed
Gas Field Development	2006/2635	Not Controlled Action	Completed
Gas Fields Development	2011/5879	Not Controlled Action	Completed
Grevillea infecunda tip cuttings and soil samples	2005/1979	Not Controlled Action	Completed
Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic	2015/7551	Not Controlled Action	Completed
Henry-1 Exploration Well, Petroleum Permit Area VIC/P44	2005/2147	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
Maintenance of Access Track and Weed Removal	2009/4973	Not Controlled Action	Completed
Nirranda South Wind Farm Pty Ltd	2002/763	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed
Port Campbell Headland Walking Trail Realignment	2012/6676	Not Controlled Action	Completed
Proposed replacement of existing road culvert	2013/7077	Not Controlled Action	Completed
Residential/Resort/Golf Course development	2002/907	Not Controlled Action	Completed
Stage 1 residential subdivision, Anna Catherine Drive	2005/1992	Not Controlled Action	Completed
Track construction - Great Ocean Walk	2002/793	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Victorian Generator Project	2005/1984	Not Controlled Action	Completed
Wind Farm Construction and Operation	2001/471	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2005/2295	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey within Torquay Sub-basin off sthn Victoria	2012/6256	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
BHPBilliton Otway 3D Seismic Survey	2007/3443	Not Controlled Action (Particular Manner)	Post-Approval
Deepwater Sorell Basin 2001 Non-Exclusive 2D Seismic Survey	2001/156	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
Fuelbreak construction	2009/4915	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
La Bella 3D Marine Seismic Survey, Otway Basin, VIC	2012/6683	Not Controlled Action (Particular Manner)	Post-Approval
OTE10 2D Marine Seismic Survey	2009/5223	Not Controlled Action (Particular Manner)	Post-Approval
Otway Basin Exploration Drilling Campaign, Vic	2011/6125	Not Controlled Action (Particular Manner)	Post-Approval
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval
Speculant 3D Transition Zone Seismic Survey	2010/5558	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Torquay Sub-basin (VIC/P62) OTE12-3D Seismic Survey	2012/6655	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5700	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval
Vic-P51 and Vic-P52 2D seismic survey	2002/811	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
3D Marine Seismic Survey	2011/6156	Referral Decision	Completed
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed
VICP61 2D Marine Seismic Survey	2008/3975	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
Bonney Coast Upwelling	South-east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica		
Wedge-tailed Shearwater [84292]	Foraging	Likely to occur

Scientific Name	Behaviour	Presence
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	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]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high	Known to occur

Scientific Name	Behaviour	Presence
	use area)	
[Balaenoptera musculus brevicauda](#)		
Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix 6 - Oil Spill Trajectory Modelling

EAST COAST GAS SUPPLY

Oil Spill Modelling

MAQ1314J
East Coast Gas Supply
Oil Spill Modelling
Rev2
10 January 2024

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Rev0	Draft report issued for client's review	Jeremie Bernard Dr Larissa Perez	Jeremie Bernard Dr Ryan Dunn	Dr. Sasha Zigic	3 November 2023
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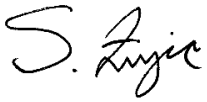
Dr. Sasha Zigic  8 December 2023

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TERMS AND ABBREVIATIONS

AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ANZECC	Australian and New Zealand Environment and Conservation Council
API	American Petroleum Institute gravity. A measure of how heavy or light a petroleum liquid is compared to water.
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ASTM	American Society for Testing and Materials
BIA	Biologically Important Area
Bonn Agreement	An agreement for cooperation in dealing with pollution of the North Sea by oil and other harmful substances, 1983, includes: Governments of the Kingdom of Belgium, the Kingdom of Denmark, the French Republic, the Federal Republic of Germany, the Republic of Ireland, the Kingdom of the Netherlands, the Kingdom of Norway, the Kingdom of Sweden, the United Kingdom of Great Britain and Northern Ireland and the European Union.
BP	Boiling point. The temperature at which the vapor pressure of the liquid is equal to the pressure exerted on it by the surrounding atmosphere
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CFSR	Climate Forecast System Reanalysis
Decay	The process where oil components are changed either chemically or biologically (biodegradation) to another compound. It includes breakdown to simpler organic carbon compounds by bacteria and other organisms, photo-oxidation by solar energy, and other chemical reactions.
Deterministic oil spill modelling	Oil spill modelling involving a computer simulation of a single hypothetical oil spill event subject to a single sequence of wind, current and other sea conditions over time. Single oil spill modelling, also referred to as “deterministic modelling” provides a simulation of one possible outcome of a given spill scenario, subject to the metocean conditions that are imposed. Single oil spill modelling is commonly used to consider the fate and effects of ‘worst-case’ oil spill scenarios that are carefully selected in consideration of the nature and scale of the offshore petroleum activity and the local environment (NOPSEMA, 2017). Because the outcomes of a single oil spill simulation can only represent the outcome of that scenario under one sequence of metocean conditions, worst-case conditions are often identified from stochastic modelling. It is impossible to calculate the likelihood of any outcome from a single oil spill simulation. Single oil spill modelling is generally used for response planning, preparedness planning and for supporting oil spill response operations in the event of an actual spill
Dynamic viscosity	The dynamic viscosity of a fluid expresses its resistance to shearing flows, where adjacent layers move parallel to each other with different speeds.
Floating oil exposure	Contact by floating oil on the sea surface at concentrations equal to or exceeding defined threshold concentrations. The consequence will vary depending on the threshold and the receptors
GODAE	Global Ocean Data Assimilation Experiment
HYCOM	Hybrid Coordinate Ocean Model. A data-assimilative, three-dimensional ocean model
HYDROMAP	Advanced ocean/coastal tidal model used to predict tidal water levels, current speed and current direction.
IMCRA	Integrated marine and coastal regionalisation areas
IOA	Index of Agreement
ITOPF	International Tanker Owners Pollution Federation Limited
KEF	Key Ecological Feature
LGA	Local Government Areas
MAE	Mean Absolute Error
MAHs	Monoaromatic Hydrocarbons
MNP	Marine National Park

MP	Marine Park
NASA	National Aeronautics and Space Administration (USA)
NCEP	National Centres for Environmental Prediction (USA)
NOAA	National Oceanic and Atmospheric Administration (USA)
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NP	National Park
NR	Nature Reserve
PAH	Polynuclear Aromatic Hydrocarbons
Pour Point	The pour point of a liquid is the temperature below which the liquid loses its flow characteristics
ppb	Parts per billion (concentration)
psu	Practical salinity units
Ramsar site	A site listed under the Ramsar Convention on wetlands which is an international intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.
RSB	Reefs, Shoals and Banks
Shoreline accumulation	Arrival of oil at or near shorelines at on-water concentrations equal to or exceeding defined threshold concentrations. Shoreline contact is judged for floating oil arriving within a 2 km buffer zone from any shoreline as a conservative measure
SIMAP	Spill Impact Model Application Package. SIMAP is designed to simulate the fate and effects of spilled hydrocarbons for surface or subsea releases
SRTM	Shuttle Radar Topography Mission
State Waters	Low water mark seaward for three nautical miles
STB	Standard Barrel
Stochastic oil spill modelling	Stochastic oil spill modelling is created by overlaying and statistically analysing the outcomes of many single oil-spill simulations of a defined spill scenario, where each simulation was subject to a different sequence of metocean conditions, selected objectively (typically by random selection) from a long sequence of historic conditions for the study area. Analysis of this larger set of simulations provides a more accurate indication of the area of hydrocarbon exposure and indicates which locations are more likely to be exposed (as well as other statistics). Stochastic oil spill modelling avoids biases that affect single oil spill modelling (due to the reliance on only one possible sequence of conditions). However, when interpreting stochastic modelling, which is based on a wide range of potential conditions that might happen to occur, it is essential to understand that calculations will encompass a much larger area than could be exposed in any single spill event, where a more limited set of conditions will occur. Consequently, it is misleading to imply that the region derived from stochastic modelling indicate the outcomes expected from a single spill event (NOPSEMA, 2017) Stochastic modelling is generally used for risk assessment and preparedness planning by indicating locations that could be exposed and may require response or subsequent impact assessment
Sub-LGA	Sub-Local Government Areas
TOPEX/Poseidon	A joint satellite mission between NASA and CNES to map ocean surface topography using an array of satellites equipped with detailed altimeters
US EPA	United States Environmental Protection Agency
World Ocean Atlas	A collection of physicochemical parameters (e.g. temperature, salinity, oxygen, phosphate, silicate, and nitrate) based on profile data from the World Ocean Database (NCEI, 2021) established by NOAA's National Centers for Environmental Information (NCEI)
WGS 1984	World Geodetic System 1984 (WGS84); reference coordinate system

EXECUTIVE SUMMARY

Background

Cooper Energy (Cooper) is progressing plans to drill the Elanora-1 ST1, Pecten East-2 and Annie-2 wells in the Otway Basin, Victoria.

In order to inform the offshore environmental impact and risk assessments Cooper commissioned RPS to conduct a detailed oil spill modelling study assessing the following hypothetical scenarios:

- **Scenario 1**: A 105,289 bbl (16,740 m^3) subsurface release of condensate over 102 days following a loss of well control (LOWC) incident at Elanora-1 ST1.
- **Scenario 2**: An 83,273 bbl (13,239 m^3) subsurface release of condensate over 102 days following a LOWC incident at Pecten East-2; and
- **Scenario 3**: A 66,430 bbl (10,562 m^3) subsurface release of condensate over 104 days following a LOWC incident at Annie-2.

Note, the 104-day model duration for Scenario 3 relates to slightly more conservative response time for the relief well to kill Annie-2. This duration was carried over from the specifications of the original Annie-2 modelling.

The modelling assessment was undertaken on a seasonal basis (summer – November to April, and winter – May to October), with 100 modelling simulations completed for each season.

The purpose of the modelling is to provide an understanding of a conservative 'outer envelope' of the potential area of exposure in the unlikely event of hydrocarbon spill. The modelling does not take into consideration any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill. Therefore, the modelling results represent the maximum extent of hydrocarbon exposure.

The spill modelling was performed using an advanced three-dimensional trajectory and fates model; Spill Impact Model Application Program (SIMAP). The SIMAP model calculates the transport, spreading, entrainment and evaporation of spilled hydrocarbons over time, based on the prevailing wind and current conditions and the physical and chemical properties.

Methodology

The modelling study was carried out in several stages. Firstly, a 10-year wind and current dataset (2010–2019) was generated and the currents included the combined influence of three-dimensional large-scale ocean currents and tidal currents. Secondly, the currents, winds and detailed condensate characteristics were used as inputs in the three-dimensional oil spill model (SIMAP) to simulate the drift, spread, weathering and fate of the spilled oil.

As spills can occur during any set of wind and current conditions, modelling was conducted using a stochastic (random or non-deterministic) approach, which involved running 100 randomly selected single trajectory simulations per season, per scenario, with each simulation having the same spill information (location, spill volume, duration and composition of hydrocarbons) but varying start times. This ensured that each spill simulation was subject to a unique set of wind and current conditions.

The SIMAP system, the methods and analysis presented herein, use modelling algorithms which have been anonymously peer reviewed and published in international journals. Further, RPS warrants that this work meets and exceeds the ASTM Standard F2067-22 "*Standard Practice for Development and Use of Oil Spill Models*".

Condensate Properties

An exploration well has been drilled within the Annie field with hydrocarbon properties being known for that location. Annie condensate has a higher residuals profile when compared with other offset fields representing a more conservative analogue and therefore Annie condensate was selected for all scenarios

modelled in this assessment. While a comprehensive oil assay for Annie-1 condensate was provided by the client (Core Lab RFL201903231), it should be noted that essential data pertaining to the pour point, dynamic viscosity, and aromatic content for distinct boiling point ranges were absent from the dataset. Consequently, a pragmatic approach was adopted to supplement these missing values by sourcing relevant information from the Minerva condensate assay data. Minerva condensate is found in a nearby reservoir.

The Annie-2 condensate has an API of 41.0, density of 820.0 kg/m^3 (at 16 ºC), with low viscosity (1.063 cP at 20 ºC) classifying it as a Group II (light-persistent) oil according to the International Tankers Owners Pollution Federation (ITOPF, 2020) and US EPA/USCG classifications. The condensate comprises a significant portion of volatiles and semi- to low-volatiles (82.5% total) with 17.5% residual components. This means the condensate will evaporate readily when on the water surface, with the persistent components to remain on the water surface or in the water column over time.

Results

Scenario: 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1

- The maximum distance and corresponding direction from the release location to the low (1–10 g/m^2) and moderate (10–50 g/m^2) floating oil exposure zones was 75.7 km (east, winter) and 11.7 km (east-southeast, summer), respectively. There was no floating oil exposure predicted above the high (>50 g/m^2) threshold.
- The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 100%. The minimum time before oil accumulation at, or above, the low threshold was 1.83 days whilst the maximum total volume ashore for a single spill trajectory was 251.0 m^3, and the maximum length of shoreline with accumulation above the low, moderate and high thresholds were 295.0 km, 48.0 km and 1.0 km, respectively, all occurring during winter.
- Excluding the BIAs that the release location resides within, the highest probabilities of low (10 ppb) dissolved hydrocarbon exposure were 15% (Southern Right Whale – Aggregation BIA, summer) and 21% (Short-tailed Shearwater – Foraging BIA, winter).
- Except for the receptors the release location is located within, during summer the highest probability of low (10 ppb) entrained hydrocarbon exposure was 100% recorded for Southern Right Whale – Aggregation BIA. Additional receptors including LGAs, sub-LGAs, and AMPs were predicted with entrained hydrocarbon exposure (refer to Table 11.9). During winter, several receptors, including the Apollo AMP, Southern Right Whale – Aggregation and White-faced Storm-petrel - Foraging BIAs revealed 100% probability of low entrained hydrocarbon exposure.

Scenario: 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2

- The maximum distance and corresponding direction from the release location to the low and moderate exposure zones was 74.4 km (east-southeast, winter) and 15.2 km (east-southeast, winter), respectively. There was no floating oil exposure observed above the high threshold.
- The probability of accumulation to any shoreline at, or above, the low threshold was 100%. The minimum time before oil accumulation at, or above, the low threshold was 1.17 days whilst the maximum total volume ashore for a single spill trajectory was 406.6 m^3, and the maximum length of shoreline accumulation at the low, moderate and high thresholds were 269.0 km (summer), 75.0 km (summer) and 6.0 km (winter), respectively.
- Excluding the BIAs that the release location resides within, the highest probability of low dissolved hydrocarbon exposure was 21% during summer (Short-tailed Shearwater - Foraging) and 59% during winter (Short-tailed Shearwater - Foraging).
- The highest probability of low entrained hydrocarbon exposure was recorded at 100% for receptors that the release location doesn't reside within, including Southern Right Whale – Aggregation BIA and

Warrnambool Plain IBRA. Additional receptors including sub-LGAs, and AMPs were predicted with entrained hydrocarbon exposure.

Scenario: 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2

- The maximum distance and corresponding direction from the release location to the low and moderate exposure zones was 55.7 km (east, winter) and 3.2 km (east, winter), respectively. There was no floating oil exposure predicted above the high threshold.
- The probability of accumulation to any shoreline at, or above, the low threshold was 100%. The minimum time before oil accumulation at, or above, the low threshold was 0.96 day whilst the maximum total volume ashore for a single spill trajectory was 312.1 m^3, and the maximum length of shoreline accumulation at the low, moderate and high thresholds were 224.0 km (winter), 62.0 km (winter) and 6.0 km (winter), respectively.
- Excluding the BIAs that the release location resides within, the highest probability of low dissolved hydrocarbon exposure was 10% during summer and 33% during winter at the Short-tailed Shearwater – Foraging BIA receptor.
- The highest probability of low entrained hydrocarbon exposure was recorded at 100% for receptors that the release location doesn't reside within, including Short-tailed Shearwater – Foraging, Southern Right Whale – Aggregation BIAs and Warrnambool Plain IBRA. Additional receptors including sub-LGAs, and AMPs were predicted with entrained hydrocarbon exposure.

1 INTRODUCTION

1.1 Background

Cooper Energy (Cooper) is progressing plans to drill the Elanora-1 ST1, Pecten East-2 and Annie-2 wells in the Otway Basin (Figure 1.1).

In order to inform the offshore environmental impact and risk assessments Cooper commissioned RPS to conduct a detailed oil spill modelling study assessing the following hypothetical scenarios:

- **Scenario 1**: A 105,289 bbl (16,740 m^3) subsurface release of condensate over 102 days following a loss of well control (LOWC) incident at Elanora-1 ST1;
- **Scenario 2**: An 83,273 bbl (13,239 m3) subsurface release of condensate over 102 days following a LOWC incident at Pecten East-2; and
- **Scenario 3**: A 66,430 bbl (10,562 m^3) subsurface release of condensate over 104 days following a LOWC incident at Annie-2.

Note, the 104-day model duration for Scenario 3 relates to slightly more conservative response time for the relief well to kill Annie-2. This duration was carried over from the specifications of the original Annie-2 modelling.

The coordinates for the release location used for the above mentioned scenarios are presented in Table 1.1 and are illustrated in Figure 1.1.

The modelling assessment was undertaken on a seasonal basis (summer – November to April, and winter – May to October), with 100 simulations completed for each season.

The purpose of the modelling is to provide an understanding of a conservative 'outer envelope' of the potential area of exposure in the unlikely event of hydrocarbon spill. The modelling does not take into consideration any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill, except well kill via a relief well at the specified modelled days. Therefore, the modelling results represent the maximum extent of hydrocarbon exposure.

The spill modelling was performed using an advanced three-dimensional trajectory and fates model; Spill Impact Model Application Program (SIMAP). The SIMAP model calculates the transport, spreading, entrainment and evaporation of spilled hydrocarbons over time, based on the prevailing wind and current conditions and the physical and chemical properties.

Note that the oil spill model, the method and analysis presented herein uses modelling algorithms which have been anonymously peer reviewed and published in international journals. Furthermore, RPS warrants that this work meets and exceeds the American Society for Testing and Materials (ASTM) Standard F2067-22 "*Standard Practice for Development and Use of Oil Spill Models*".

Table 1.1 Coordinates of the release locations.

Infrastructure	Latitude	Longitude	Water Depth (m)
Elanora-1 ST1	38° 47' 41.5" S	142° 37' 56.5" E	75
Pecten East-2	38° 37' 59.7" S	142° 40' 9.7" E	55
Annie-2	38° 41' 1.68" S	142° 49' 28.56" E	56

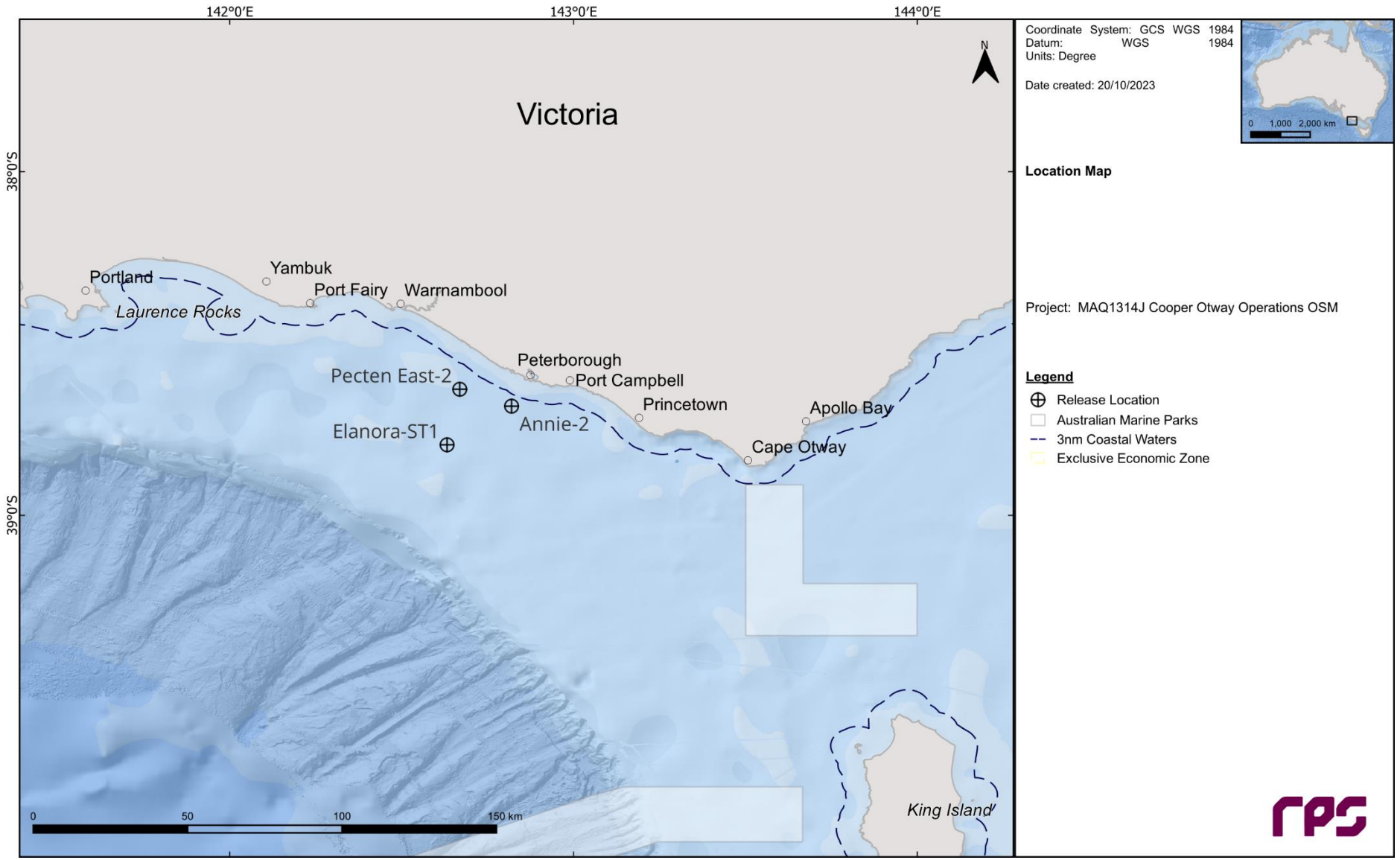

Figure 1.1 Map of the Elanora-1 ST1, Pecten East-2 and Annie-2 release locations.

1.2 What is Oil Spill Modelling?

Oil spill modelling is a valuable tool widely used for risk assessment, emergency response and contingency planning where it can be particularly helpful to proponents and decision makers. By modelling a series of the most likely oil spill scenarios, decisions concerning suitable response measures and strategic locations for deploying equipment and materials can be made, and the locations at most risk can be identified. The two types of oil spill modelling often used are stochastic (Section 1.2.1) and deterministic (Section 1.2.2) modelling.

1.2.1 Stochastic Modelling (Multiple Spill Simulations)

Stochastic oil spill modelling is created by overlaying a great number (often hundreds) of individual, computer-simulated hypothetical spills (NOPSEMA, 2018; Figure 1.2).

Stochastic modelling is a common means of assessing the potential risks from oil spills related to new projects and facilities. Stochastic modelling typically utilises hydrodynamic data for the location in combination with historic wind data. Typically, 100 iterations of the model will be run utilising the data that is most relevant to the season or timing of the project.

The outcomes are often presented as a probability of exposure and is primarily used for risk assessment purposes in view to understand the range of environments that may be affected or impacted by a spill. Elements of the stochastic modelling can also be used in oil spill preparedness and planning.

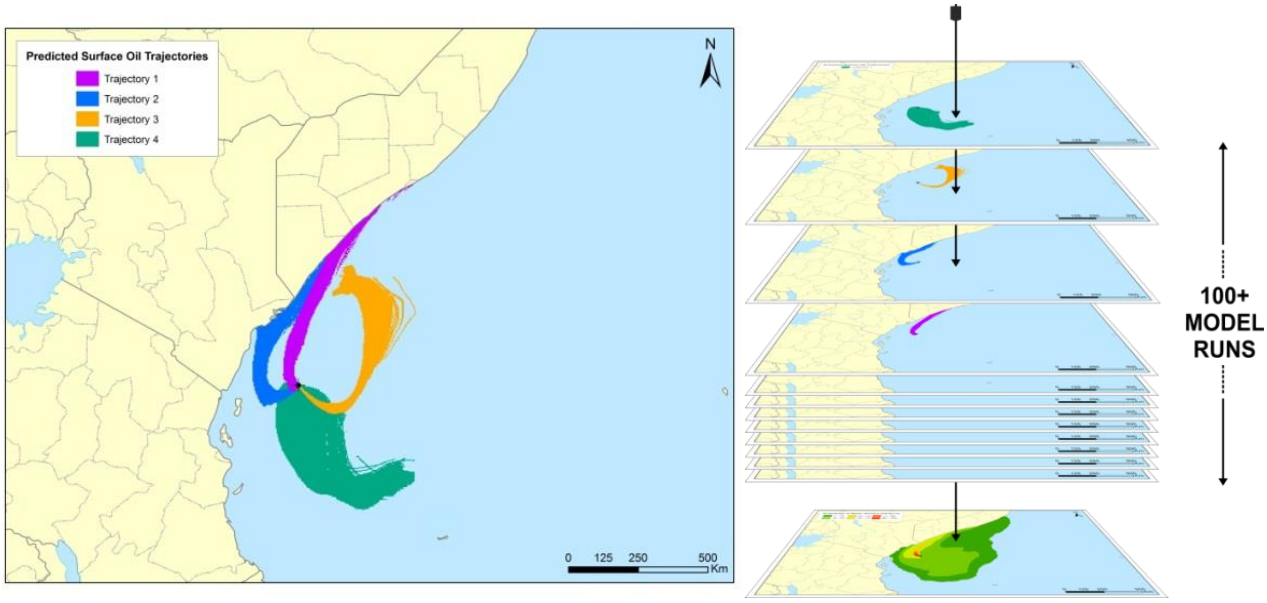

Figure 1.2 Examples of four individual spill trajectories (four replicate simulations) predicted by SIMAP for a spill scenario. The frequency of contact with given locations is used to calculate the probability of impacts during a spill. Essentially, all model runs are overlain (shown as the stacked runs on the right) and the number of times that trajectories contact a given location at a concentration is used to calculate the probability.

1.2.2 Deterministic Modelling (Single Spill Simulation)

Deterministic modelling is the predictive modelling of a single incident subject to a single sample of wind and weather conditions over time (NOPSEMA, 2018; Figure 1.3).

Deterministic modelling is often paired with stochastic modelling to place the large stochastic footprint into perspective. This deterministic analysis is generally a single run selected from the stochastic analysis and serves as the basis for developing the plans and equipment needs for a realistic spill response. Deterministic spills can be selected on several basis such as minimum time to shoreline, largest swept area, maximum volume ashore, longest length of shoreline contacted by oil or largest area of entrained or dissolved hydrocarbons.

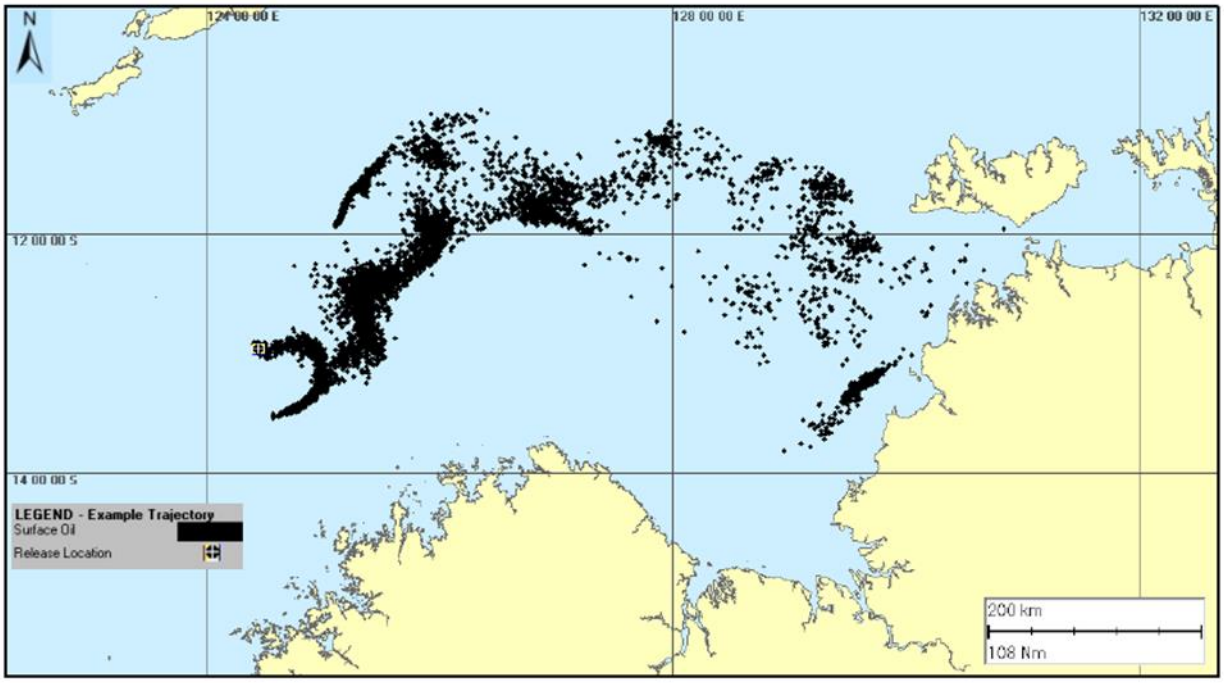

Figure 1.3 Example of an individual spill trajectory predicted by SIMAP for a spill scenario. Note, this image represents surface oil as spillets and do not take any thresholds into consideration.

2 SCOPE OF WORK

The scope of work included the following components:

- Generate 10 years of winds and three-dimensional currents from 2010 to 2019 (inclusive). The currents included the combined influence of tidal and ocean currents;
- Include the wind and current data and characteristics of the condensate as input into the three-dimensional oil spill model (SIMAP), to model the movement, spreading, weathering and shoreline contact by hydrocarbons over time;
- Use SIMAP's stochastic model (also known as a probability model) to calculate exposure to surrounding waters and shorelines. This involved running 100 randomly selected single trajectory simulations per scenario (per season), with each simulation having the same spill information (spill volume, duration and composition of hydrocarbons) but varying start times. This ensured that each spill simulation was subject to a unique set of wind and current conditions;
- Results were assessed to determine the exposure to surrounding waters and contact to shorelines based upon the thresholds outlined in the NOPSEMA Oil Spill Modelling Bulletin (NOPSEMA, 2019); and
- The stochastic modelling results were reviewed, and the "worst case" deterministic runs were identified and presented based on the following criteria (if applicable):
    a. Largest swept area for surface oil above 10 g/m^2;
    b. Largest volume of oil ashore;
    c. Longest length of shoreline with oil accumulation above 100 g/m^2;
    d. Largest area of entrained hydrocarbon exposure above 100 ppb; and
    e. Largest area of dissolved hydrocarbon exposure above 50 ppb.

3 REGIONAL CURRENTS

The Bass Strait is a body of water separating Tasmania from the southern Australian mainland, specifically the state of Victoria. The strait is a relatively shallow area of the continental shelf, connecting the southeast Indian Ocean with the Tasman Sea. Currents within the straight are primarily driven by tides, winds, incident continental shelf waves and density driven flows; high winds and strong tidal currents are frequent within the area (Jones, 1980).

The varied geography and bathymetry of the region, in addition to the forcing of the south-eastern Indian Ocean and local meteorology lead to complex shelf and slope circulation patterns (Middleton & Bye, 2007). Figure 3.1 displays seasonal current trends within the Bass Strait. During winter there is a strong eastward water flow due to the strengthening of the South Australian Current (fed by the Leeuwin Current in the Northwest Shelf), which bifurcates with one extension moving though the Bass Strait, and another forming the Zeehan Current off western Tasmania (Sandery & Kämpf, 2007). During summer, water flow reverses off Tasmania, King Island and the Otway Basin travelling eastward, as the coastal current develops due to south-easterly winds.

To accurately describe the variability in currents between the inshore and offshore region, a hybrid regional dataset was developed by combining ocean predictions obtained from HYCOM (Hybrid Coordinate Ocean Model) with surface tidal currents developed by RPS. The following sections provide a summary of the hybrid regional dataset.

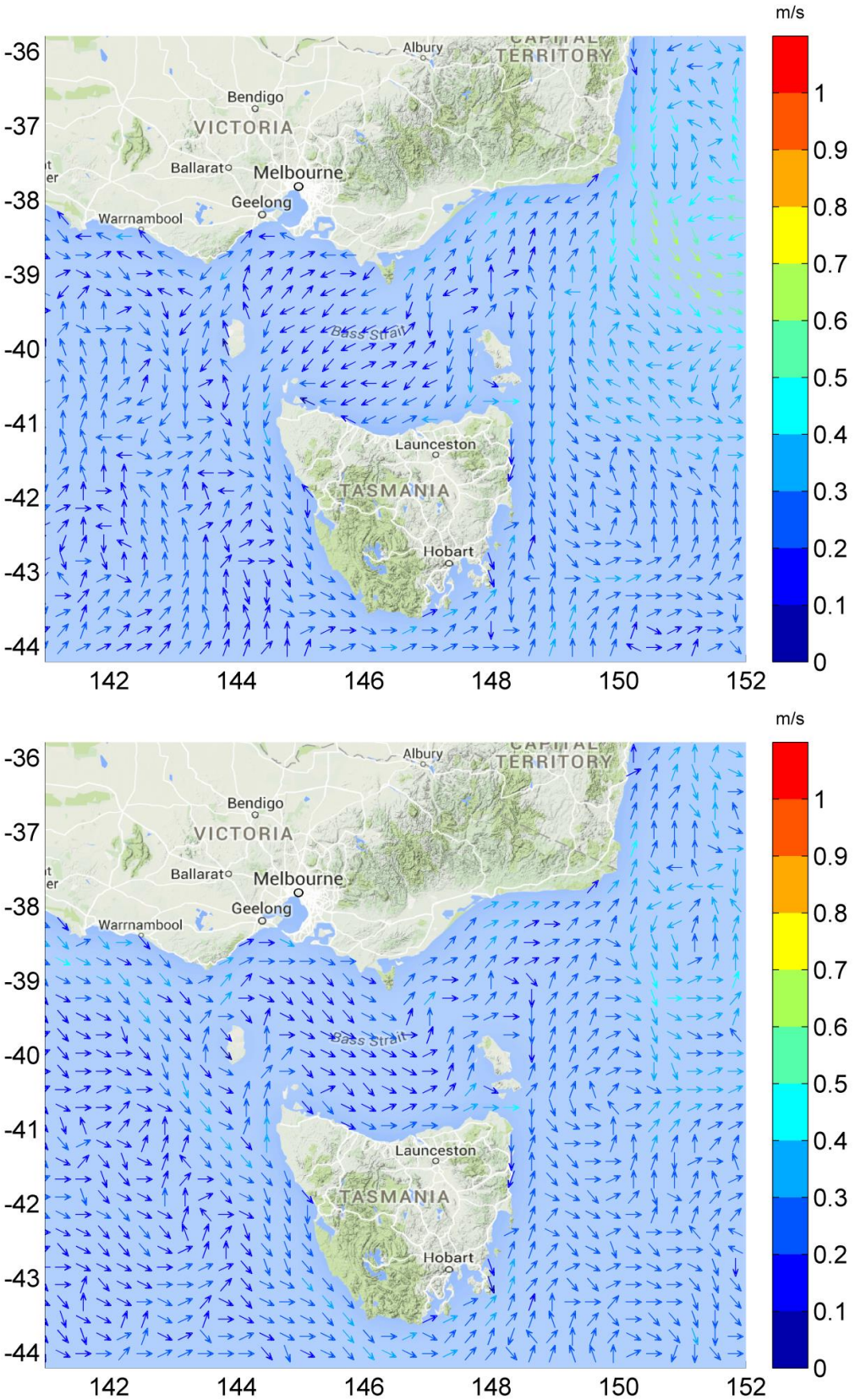

Figure 3.1 HYCOM averaged seasonal surface drift currents during summer (upper image) and winter (lower image).

3.1 Tidal currents

Tidal current data was generated using RPS's advanced ocean/coastal model, HYDROMAP. The HYDROMAP model has been thoroughly tested and verified through field measurements throughout the world for more than 30 years (Isaji & Spaulding, 1984; Isaji, et al., 2001; Zigic, et al., 2003). HYDROMAP tidal current data has been used as input to forecast (in the future) and hindcast (in the past) pollutant spills in Australian waters and forms part of the Australian National Oil Spill Emergency Response System operated by AMSA (Australian Maritime Safety Authority).

HYDROMAP employs a sophisticated sub-gridding strategy, which supports up to six levels of spatial resolution, halving the grid cell size as each level of resolution is employed. The sub-gridding allows for higher resolution of currents within areas of greater bathymetric and coastline complexity, and/or of interest to a study.

The numerical solution methodology follows that of Davies (1977a and 1977b) with further developments for model efficiency by Owen (1980) and Gordon (1982). A more detailed presentation of the model can be found in Isaji and Spaulding (1984) and Isaji et al. (2001).

3.1.1 Grid Setup

The tidal model domain is sub-gridded to a resolution of 500 m for shallow and coastal regions, starting from an offshore (or deep water) resolution of 8 km. The finer grids are progressively allocated in a step-wise fashion to more accurately resolve flows along the coastline, around islands and over regions with more complex bathymetry. Figure 3.2 shows the tidal model grid covering the study domain.

A combination of datasets was used and merged to describe the shape of the seabed within the grid domain (Figure 3.3). These included spot depths and contours which were digitised from nautical charts released by the hydrographic offices as well as Geoscience Australia database and depths extracted from the Shuttle Radar Topography Mission (SRTM30_PLUS) Plus dataset (see Becker et al., 2009).

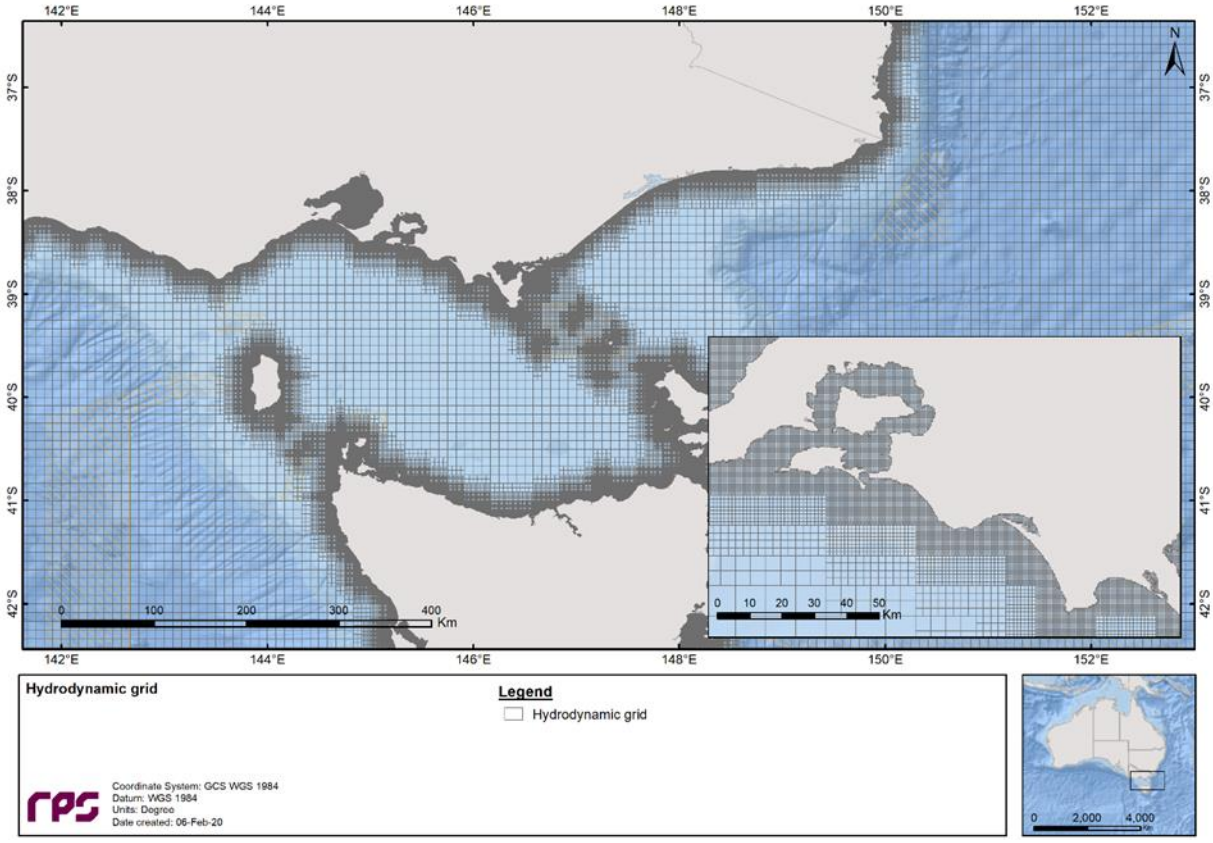

Figure 3.2 Sample of the model grid used to generate the tidal currents for the study region. Higher resolution areas are shown by the denser mesh.

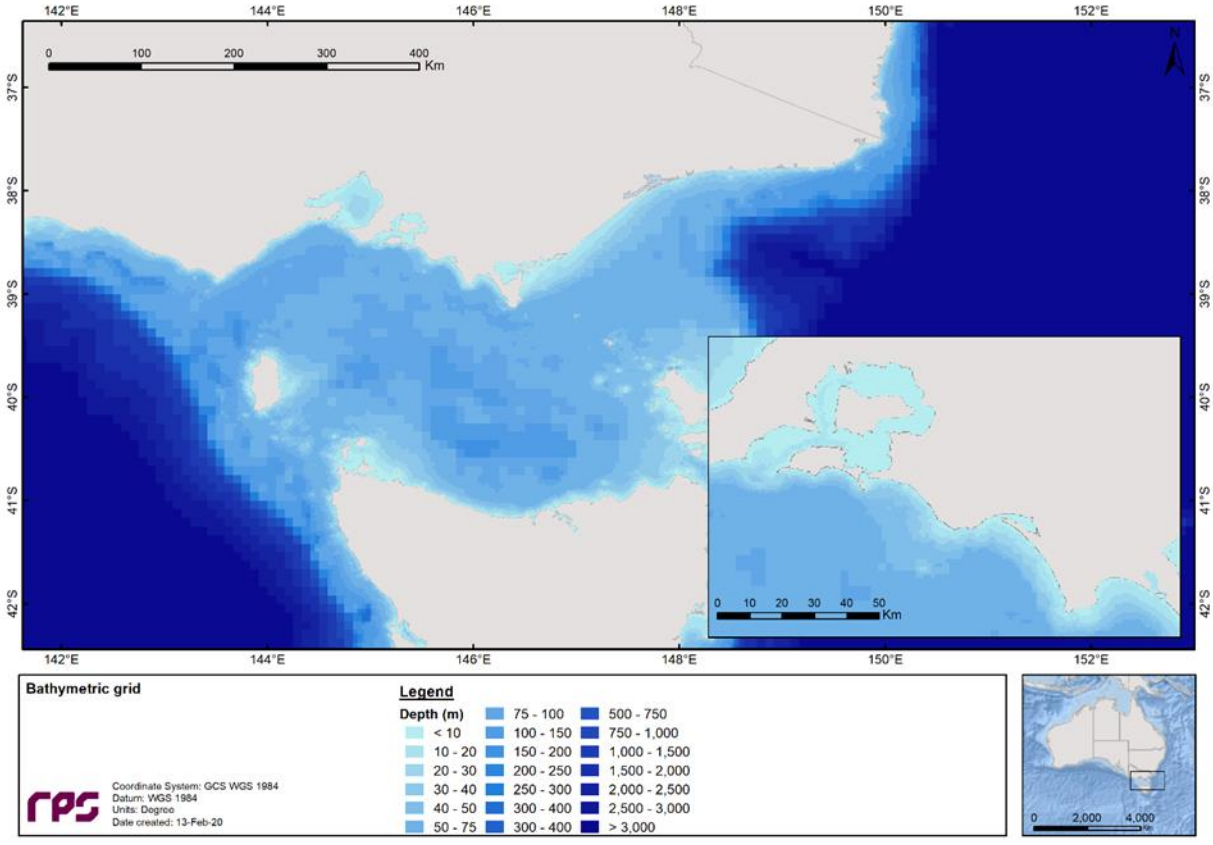

Figure 3.3 Bathymetry defined throughout the tidal model domain.

3.1.2 Tidal Conditions

The ocean boundary data for the regional model was obtained from satellite measured altimetry data (TOPEX/Poseidon 8.0) which provided estimates of the eight dominant tidal constituents at a horizontal scale of approximately 0.25 degrees. The eight major tidal constituents used were K_2, S_2, M_2, N_2, K_1, P_1, O_1 and Q_1. Using the tidal data, time series surface heights were calculated along the open boundaries for the simulation period.

The Topex/Poseidon satellite data has a resolution of 0.25 degrees globally, with higher resolution in coastal regions, and is produced and quality controlled by NASA (National Aeronautics and Space Administration). The data capturing satellites, equipped with two altimeters capable of taking sea level measurements accurate to less than ± 5 cm, measured oceanic surface elevations (and the resultant tides) for the period 1992–2005. In total these satellites carried out 62,000 orbits of the planet. The Topex/Poseidon tidal data has been widely used amongst the oceanographic community, being refereced in more than 2,100 research publications (e.g. Andersen, 1995; Ludicone et al., 1998; Matsumoto et al., 2000; Kostianoy et al., 2003; Yaremchuk & Tangdong, 2004; Qiu & Chen 2010). The Topex/Poseidon tidal data is considered suitably accurate for this study.

3.1.3 Surface Elevation Validation

To ensure that tidal predictions were accurate, predicted surface elevations were compared to data observed at a location situated within the study area (Figure 3.4).

To provide a statistical measure of the model performance, the Index of Agreement (IOA – Willmott, 1981) and the Mean Absolute Error (MAE – Willmott, 1982; Willmott & Matsuura, 2005) were used.

The MAE (Eq.1) is simply the average of the absolute values of the difference between the model-predicted (P) and observed (O) variables. It is a more natural measure of the average error (Willmott & Matsuura, 2005) and more readily understood. The MAE is determined by:

$$MAE = N^{-1} \sum_{i=1}^{N} |P_i - O_i| \qquad \text{Eq.1}$$

Where: N = Number of observations

P_i = Model predicted surface elevation

O_i = Observed surface elevation

The Index of Agreement (IOA; Eq. 2) in contrast, gives a non-dimensional measure of model accuracy or performance. A perfect agreement between the model predicted and observed surface elevations exists if the index gives an agreement value of 1, and complete disagreement between model and observed surface elevations will produce an index measure of 0 (Wilmott, 1981). Willmott et al. (1985) also suggests that values larger than 0.5 may represent good model performance. The IOA is determined by:

$$IOA = 1 - \frac{\sum |X_{model} - X_{obs}|^2}{\sum (|X_{model} - \overline{X_{obs}}| + |X_{obs} - \overline{X_{obs}}|)^2} \qquad \text{Eq.2}$$

Where: X_{model} = Model predicted surface elevation

X_{obs} = Observed surface elevation

Clearly, a greater IOA and lower MAE represent a better model performance.

Figure 3.5 and Figure 3.6 illustrate a comparison of the predicted and observed surface elevations in February 2017. As shown on the graph, the model accurately reproduced the phase and amplitudes throughout the spring and neap tidal cycles.

Table 3.1 shows the IOA and MAE values for the selected tide station locations indicating that the model is performing well.

Table 3.1 Statistical comparison between the observed and HYDROMAP predicted surface elevations.

Tide Station	IOA	MAE (m)
Gabo Island	0.98	0.08
Port MacDonnell	0.98	0.05
Port Welshpool	0.92	0.30
Portland	0.97	0.07
Stack Island	0.96	0.22

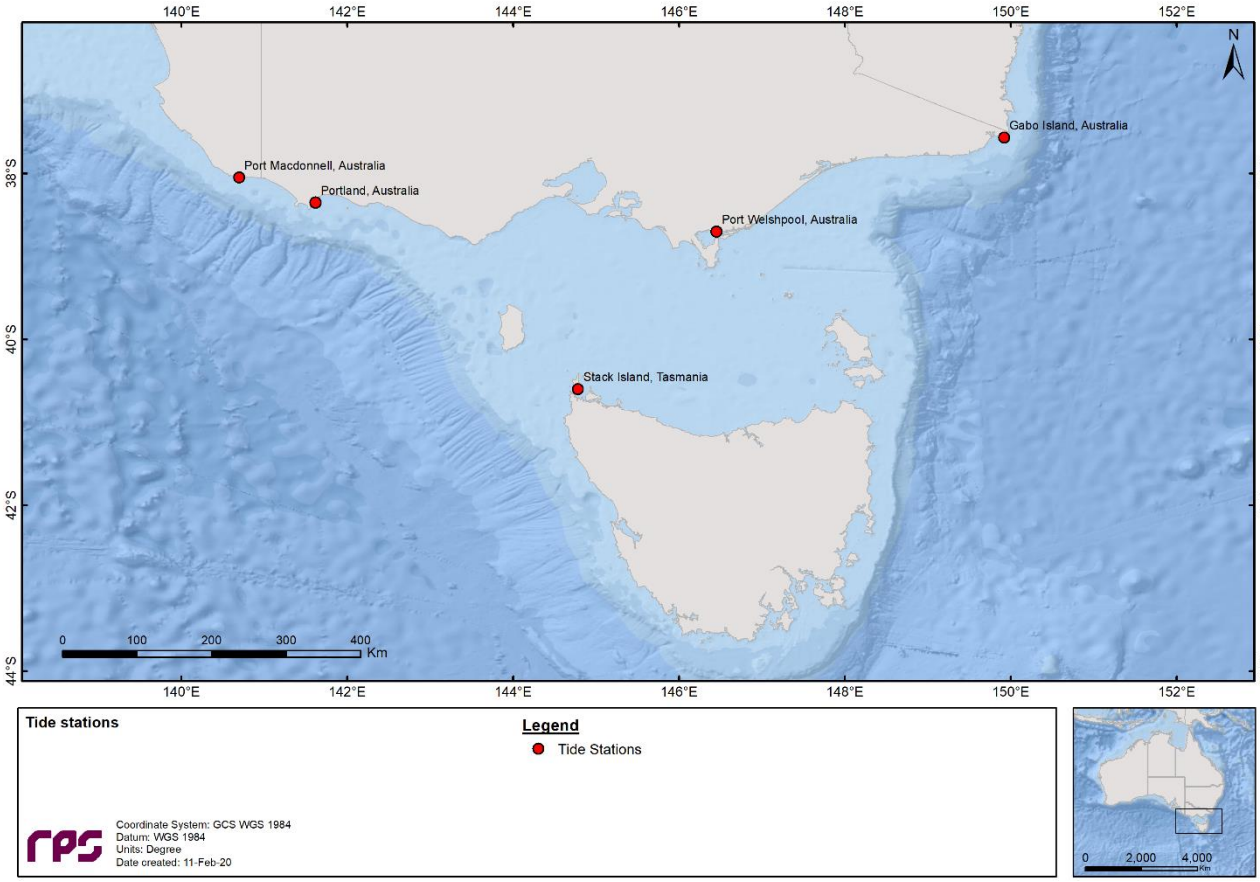

Figure 3.4 Location of the tide stations used in the surface elevation validation.

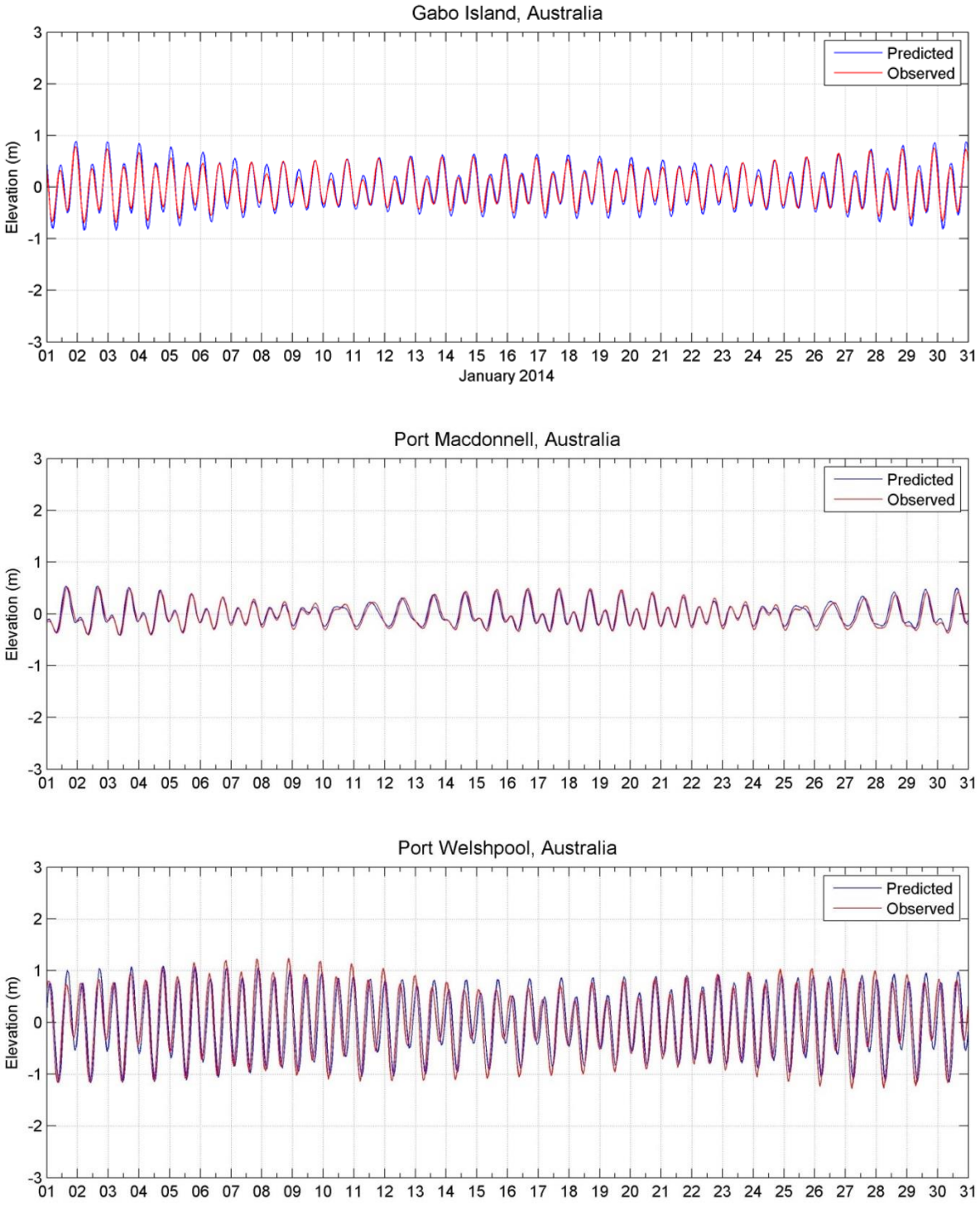

Figure 3.5 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation at tidal stations Gabo Island (upper image), Port MacDonnell (middle image) and Port Welshpool (lower image).

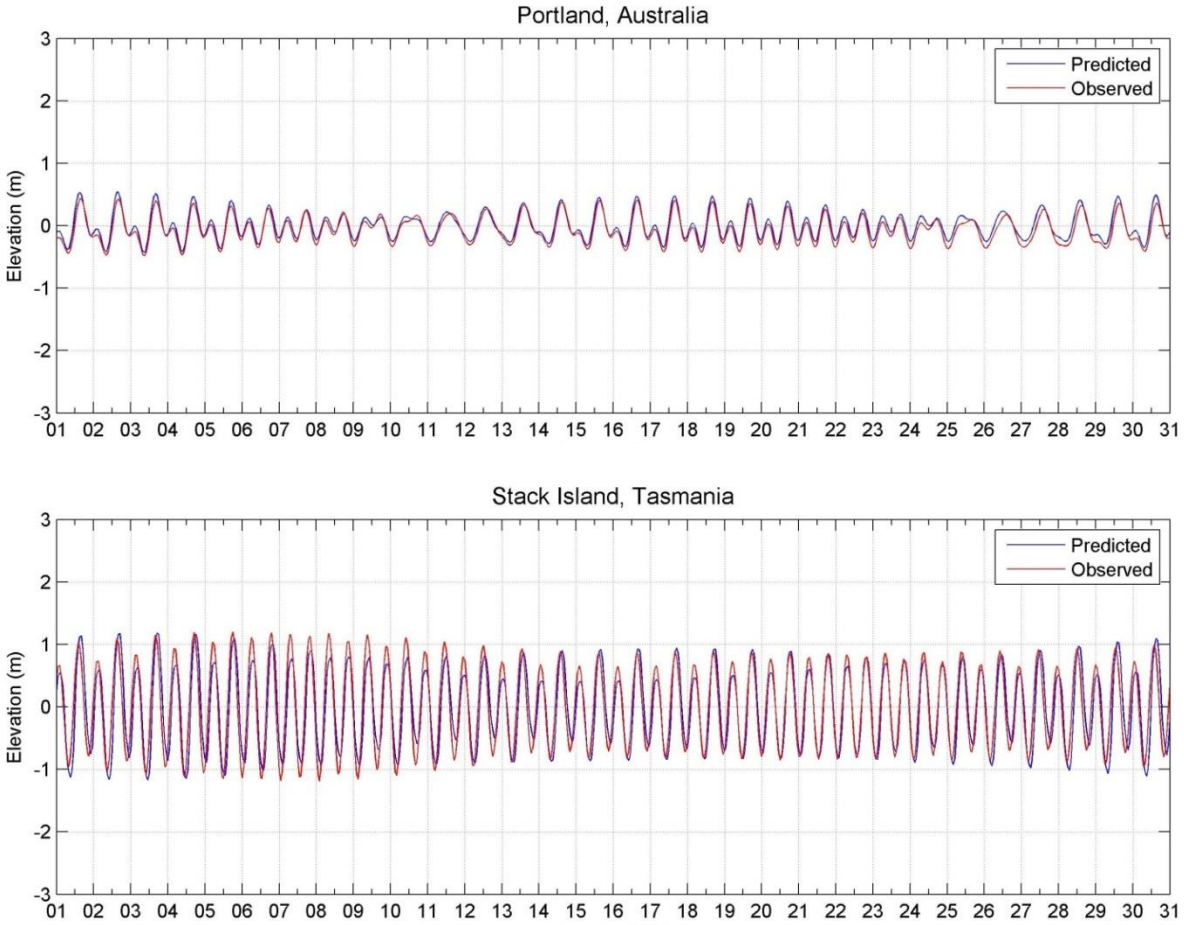

Figure 3.6 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation at tidal stations Portland (upper image) and Stack Island (lower image).

3.2 Ocean Currents

Data describing the flow of ocean currents for the years 2010 to 2019 (inclusive) was obtained from HYCOM (Hybrid Coordinate Ocean Model, Chassignet et al., 2007), which is operated by the HYCOM Consortium, sponsored by the Global Ocean Data Assimilation Experiment (GODAE). HYCOM is a data-assimilative, three-dimensional ocean model that is run as a hindcast (for a past period), assimilating time-varying observations of sea surface height, sea surface temperature and in-situ temperature and salinity measurements (Chassignet et al., 2009). The HYCOM predictions for drift currents are produced at a horizontal spatial resolution of approximately 8.25 km (1/12th of a degree) over the region, at a frequency of once per day. HYCOM uses isopycnal layers in the open, stratified ocean, but uses the layered continuity equation to make a dynamically smooth transition to a terrain-following coordinate in shallow coastal regions, and to z-level coordinates in the mixed layer and/or unstratified seas.

3.3 Surface Currents

Table 3.2 to Table 3.4 present the average and maximum surface current speeds nearby the Elanora-1 ST1 (Isabella), Pecten East-2 and Annie-2 wells by combining the ocean and tidal currents.

Near the Elanora-1 ST1 well current speeds varied throughout the year with maximum current speeds ranging between approximately 0.68 m/s (January) and 1.07 m/s (July). The dominant surface current direction was identified as easterly (towards the east) during the whole year, except for January and February.

Nearby Pecten-East 2, maximum current speeds ranged between 0.66 m/s (February) and 1.08 m/s (September). Current direction varied throughout the year, flowing mostly towards the east-southeast during winter months.

Close to Annie-2, maximum current speeds varied between 0.72 m/s (February) and 1.10 m/s (September). Similar to Pecten-East 2, current directions predominantly flowed east-southeast during winter months.

Figure 3.7 to Figure 3.12 show the monthly and total surface current rose distributions for the selected locations.

Note the convention for defining current direction is the direction the current flows towards, which is used to reference current direction throughout this report. Each branch of the rose represents the currents flowing to that direction, with north to the top of the diagram. Sixteen directions are used. The branches are divided into segments of different colour, which represent the current speed ranges for each direction. Speed intervals of 0.1 m/s are predominantly used in these current roses. The length of each coloured segment is relative to the proportion of currents flowing within the corresponding speed and direction.

Table 3.2 Predicted monthly average and maximum surface current speeds for Elanora-1 ST1 well. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.16	0.68	West
February	0.16	0.71	West
March	0.16	0.93	East
April	0.15	0.87	East
May	0.19	0.96	East
June	0.20	1.05	East
July	0.24	1.07	East
August	0.23	1.05	East
September	0.20	1.01	East
October	0.19	0.91	East
November	0.17	0.75	East
December	0.18	0.75	East
Minimum	**0.15**	**0.68**	-
Maximum	**0.24**	**1.07**	

Table 3.3 Predicted monthly average and maximum surface current speeds for Pecten East-2 well. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.17	0.68	West-northwest
February	0.19	0.66	West-northwest
March	0.18	0.86	West
April	0.15	0.75	East
May	0.19	0.91	East-southeast
June	0.19	1.05	East-southeast
July	0.24	0.99	East-southeast
August	0.23	1.02	East-southeast
September	0.20	1.08	East-southeast
October	0.19	0.92	East
November	0.17	0.74	East
December	0.18	0.80	East
Minimum	**0.15**	**0.66**	-
Maximum	**0.24**	**1.08**	

Table 3.4 Predicted monthly average and maximum surface current speeds for Annie-2 well. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.17	0.77	West
February	0.19	0.72	West
March	0.18	0.92	West
April	0.15	0.83	East
May	0.19	0.90	East-southeast
June	0.19	1.07	East-southeast
July	0.24	1.05	East-southeast
August	0.23	1.05	East-southeast
September	0.20	1.10	East
October	0.20	0.88	East
November	0.18	0.82	East
December	0.18	0.92	East
Minimum	**0.15**	**0.72**	-
Maximum	**0.24**	**1.10**	

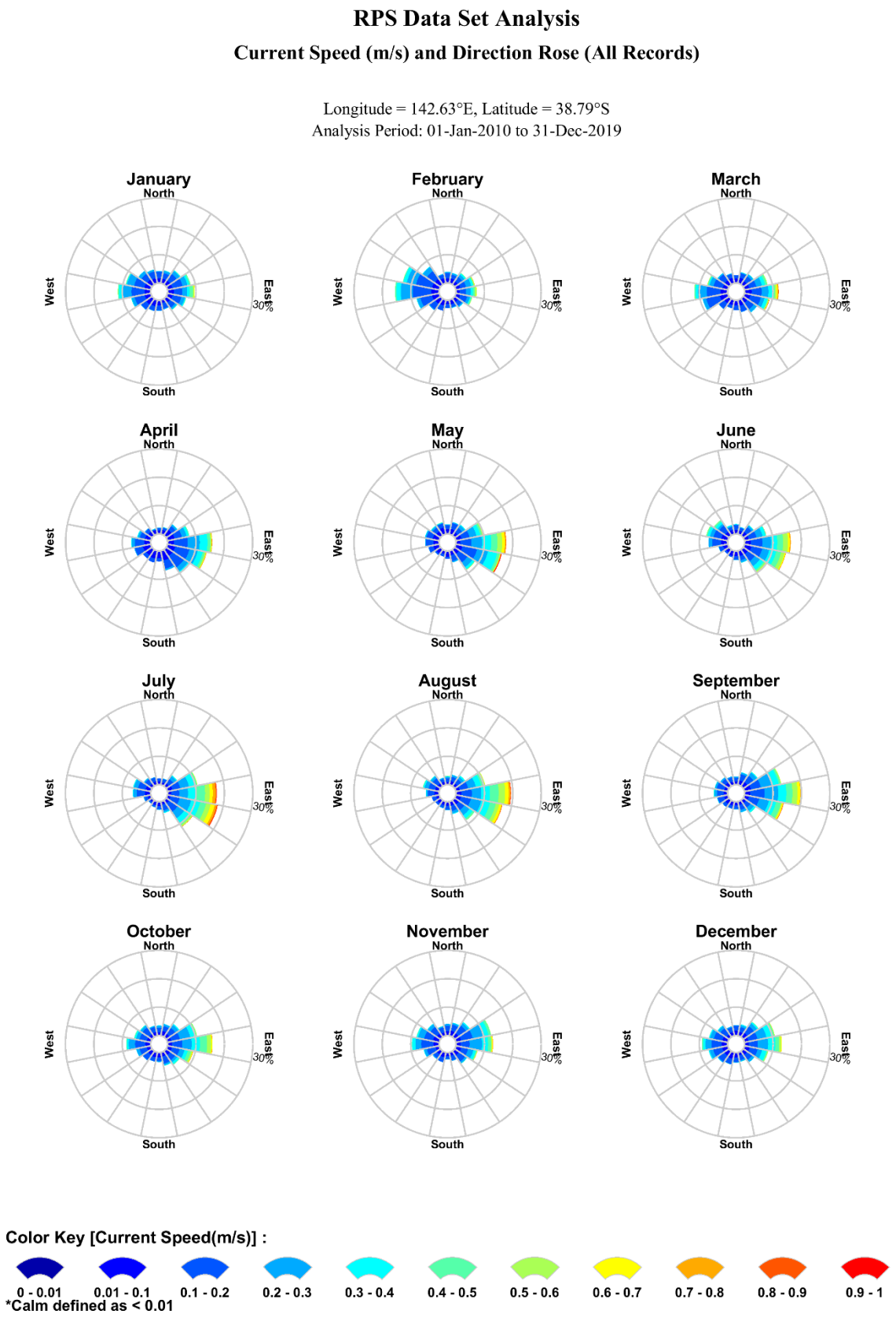

Figure 3.7 Monthly surface current rose plots nearby the Elanora-1 ST1 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

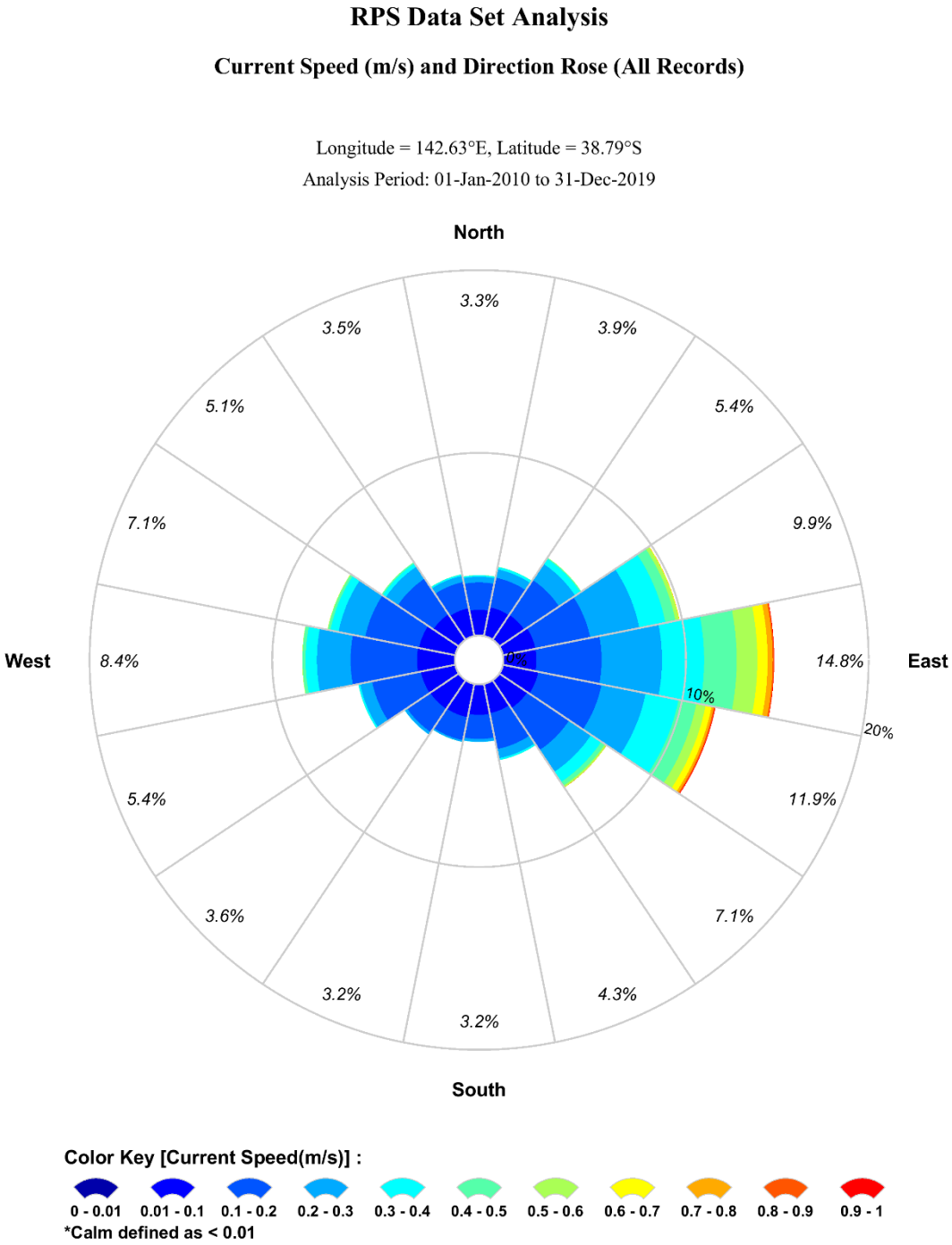

Figure 3.8 Total surface current rose plot nearby the Elanora-1 ST1 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

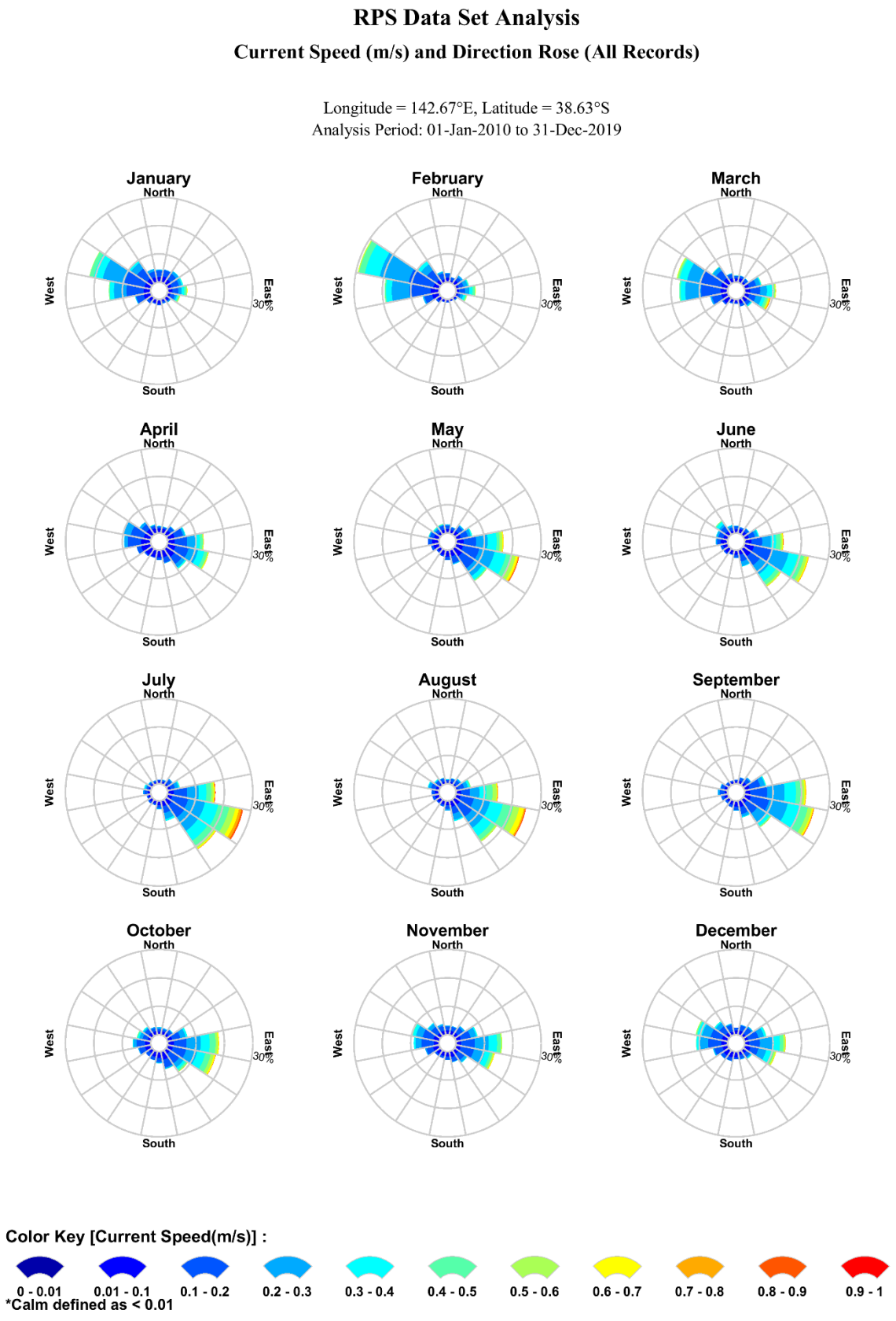

Figure 3.9 Monthly surface current rose plots nearby the Pecten East-2 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

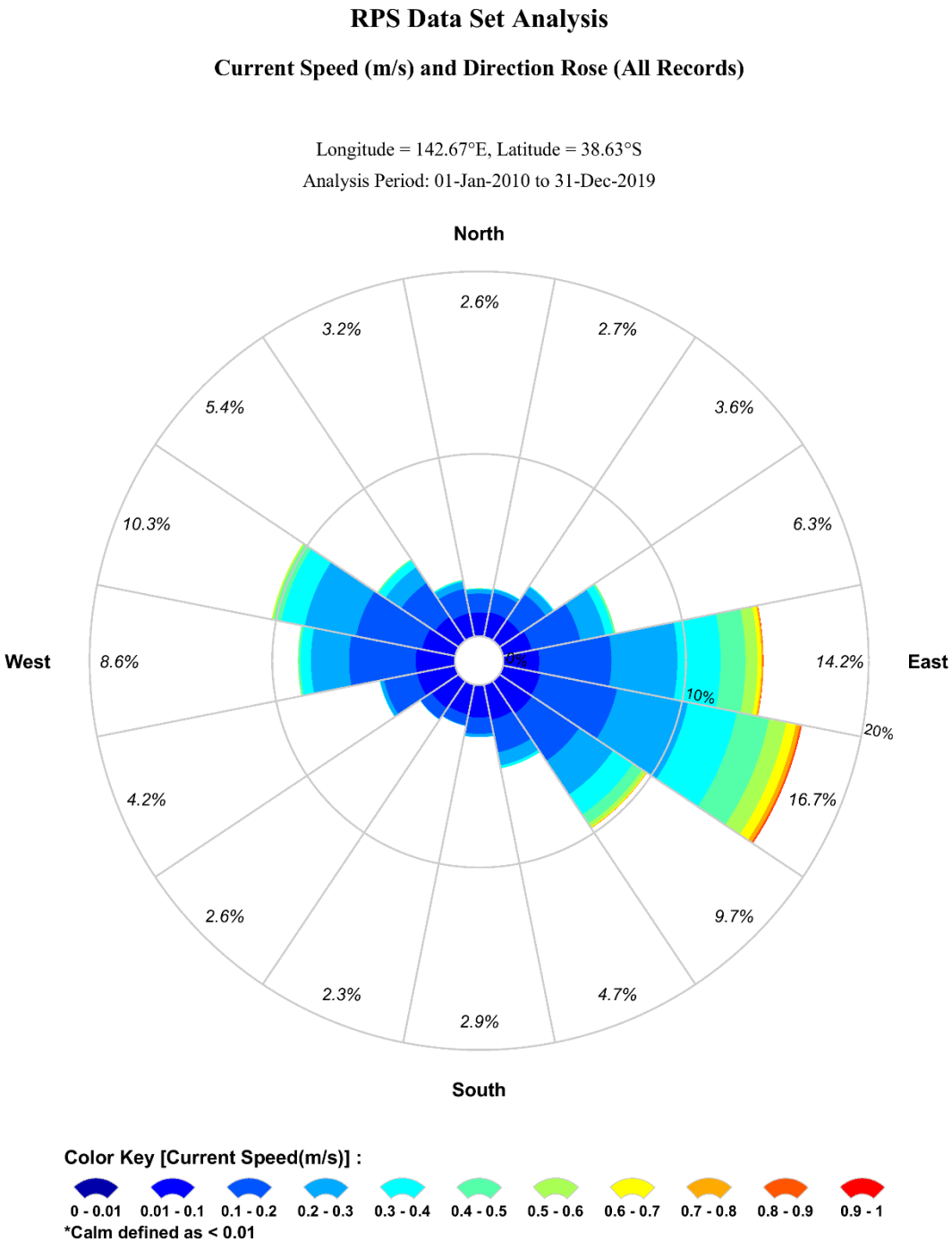

Figure 3.10 Total surface current rose plot nearby the Pecten East-2 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

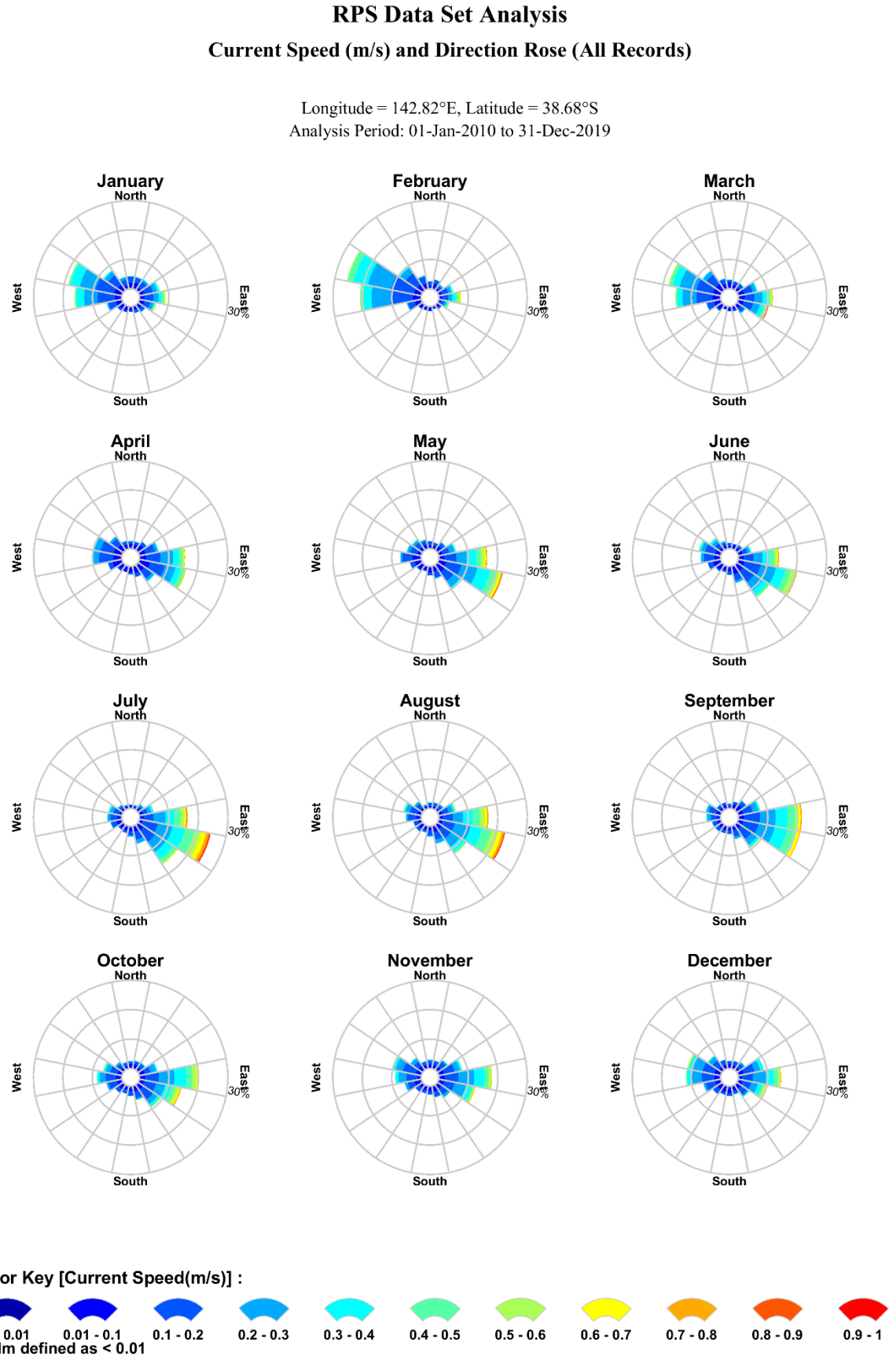

Figure 3.11 Monthly surface current rose plots nearby the Annie-2 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

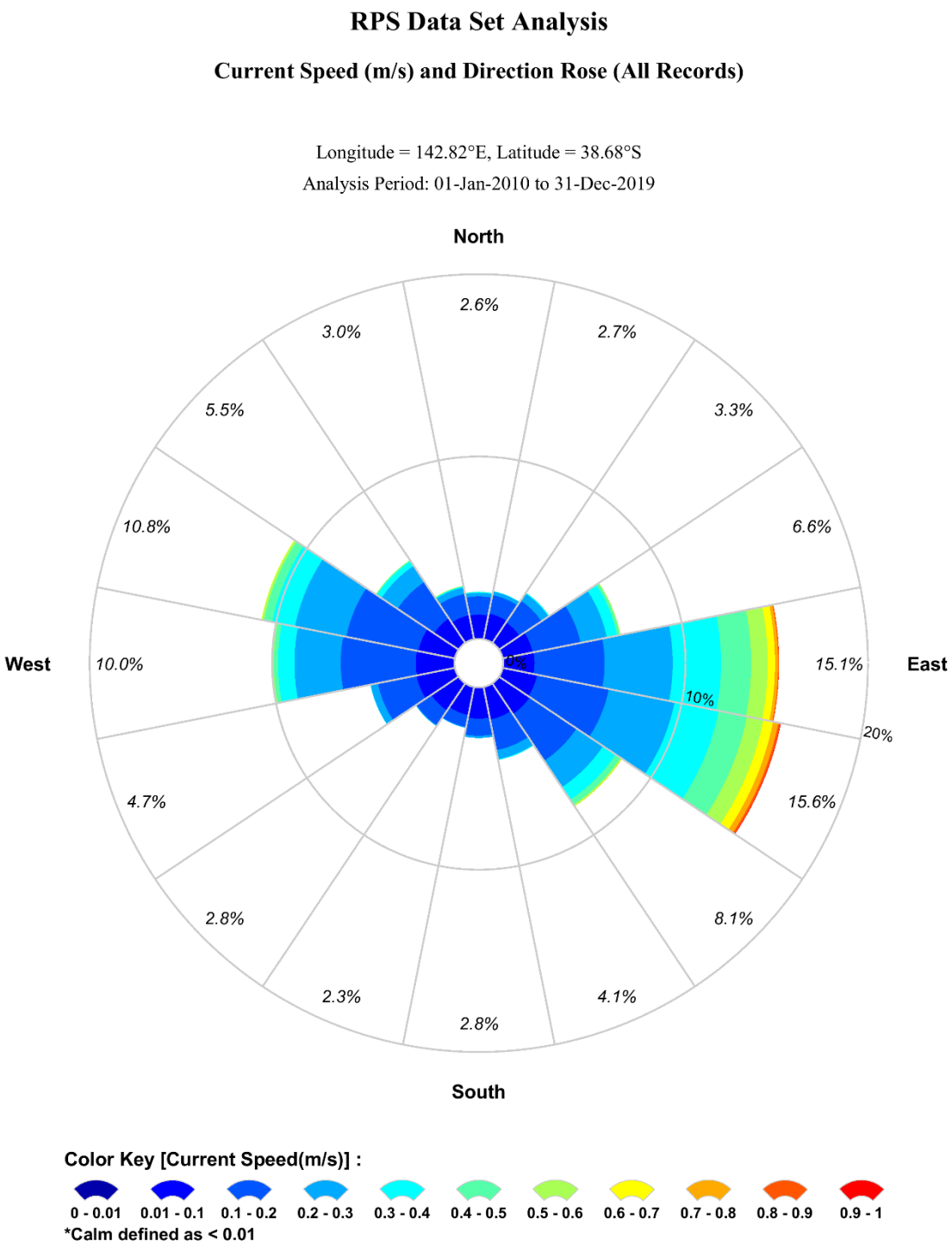

Figure 3.12 Total surface current rose plot nearby the Annie-2 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

3.4 Currents at 50 m below Surface

Table 3.5 to Table 3.7 present the average and maximum current speeds (at 50m below surface) nearby the Elanora-1 ST1, Pecten East-2 and Annie-2 wells by combining the ocean and tidal currents.

Near the Elanora-1 ST1 well current speeds varied throughout the year with maximum current speeds ranging between approximately 0.36 m/s (January) and 0.59 m/s (July).

Nearby Pecten-East 2, maximum current speeds ranged between 0.21 m/s (February) and 0.36 m/s (July).

Close to Annie-2, maximum current speeds varied between 0.28 m/s (November) and 0.39 m/s (July). Similar to Pecten-East 2.

Figure 3.13 to Figure 3.18 show the monthly and total current rose distributions for the selected locations.

Table 3.5 Predicted monthly average and maximum current speeds (at 50m below surface) for Elanora-1 ST1 well. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.10	0.36	West
February	0.09	0.39	West
March	0.10	0.41	East-southeast
April	0.09	0.52	East-southeast
May	0.10	0.52	East-southeast
June	0.11	0.47	East-southeast
July	0.12	0.59	East-southeast
August	0.11	0.53	East-southeast
September	0.10	0.50	East-southeast
October	0.10	0.46	East-southeast
November	0.09	0.40	East-southeast
December	0.10	0.40	East-southeast
Minimum	**0.09**	**0.36**	-
Maximum	**0.12**	**0.59**	

Table 3.6 Predicted monthly average and maximum surface current speeds (at 50m below surface) for Pecten East-2 well. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.06	0.27	East and west
February	0.06	0.21	East and west
March	0.06	0.31	East and west
April	0.06	0.27	East and west
May	0.06	0.31	East and west
June	0.06	0.29	East and west
July	0.07	0.36	East and west
August	0.07	0.31	East and west
September	0.06	0.33	East and west
October	0.06	0.26	East and west
November	0.06	0.24	East and west
December	0.06	0.27	East and west
Minimum	**0.06**	**0.21**	-
Maximum	**0.07**	**0.36**	

Table 3.7 Predicted monthly average and maximum surface current speeds (at 50m below surface) for Annie-2 well. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.09	0.35	West-northwest and east-southeast
February	0.09	0.29	
March	0.09	0.37	
April	0.09	0.30	
May	0.09	0.39	
June	0.09	0.35	
July	0.09	0.39	
August	0.09	0.36	
September	0.09	0.34	
October	0.09	0.30	
November	0.09	0.28	
December	0.09	0.30	
Minimum	**0.09**	**0.28**	-
Maximum	**0.09**	**0.39**	

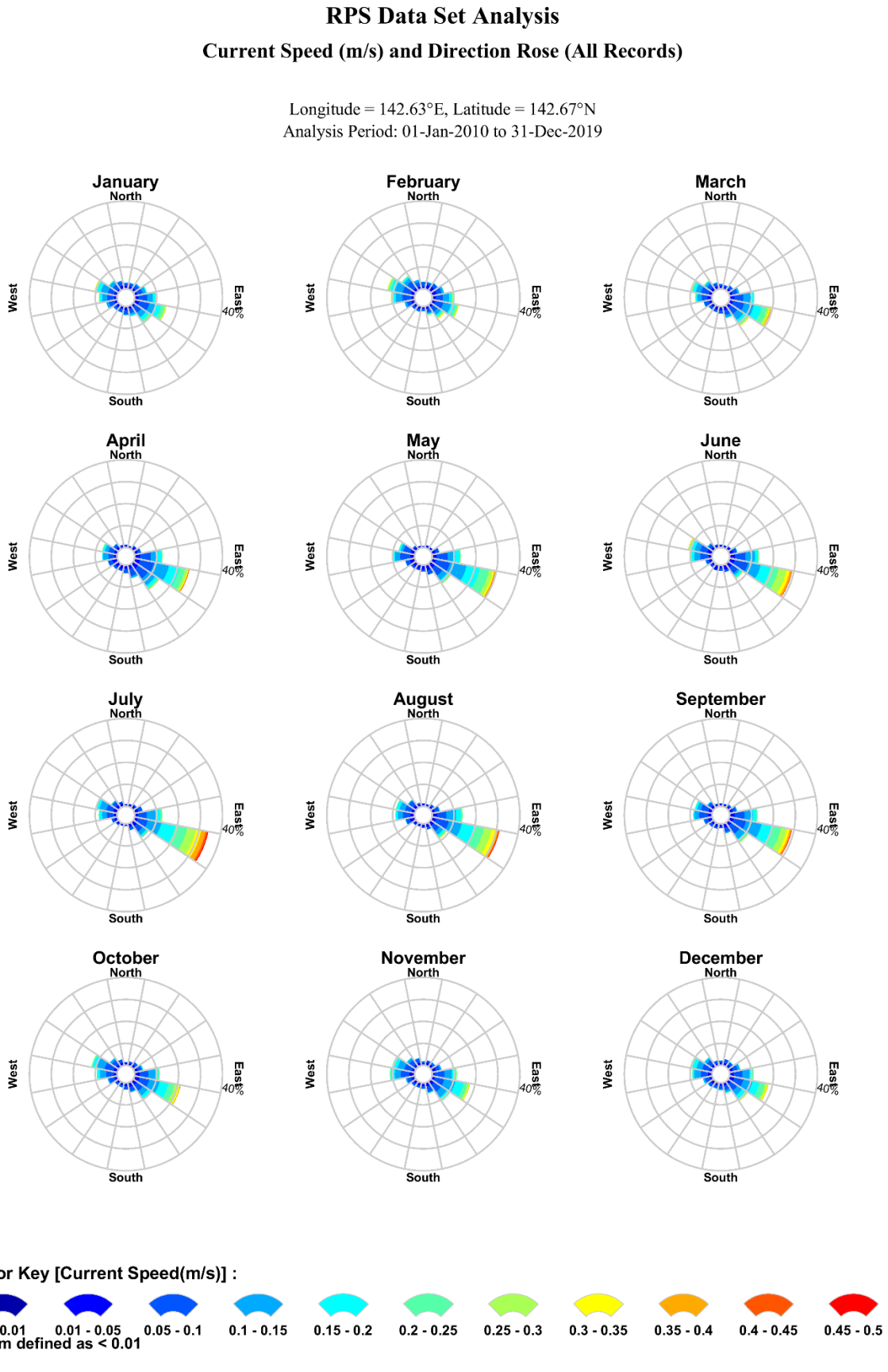

Figure 3.13 Monthly current rose plots (at 50m below surface) nearby the Elanora-1 ST1 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

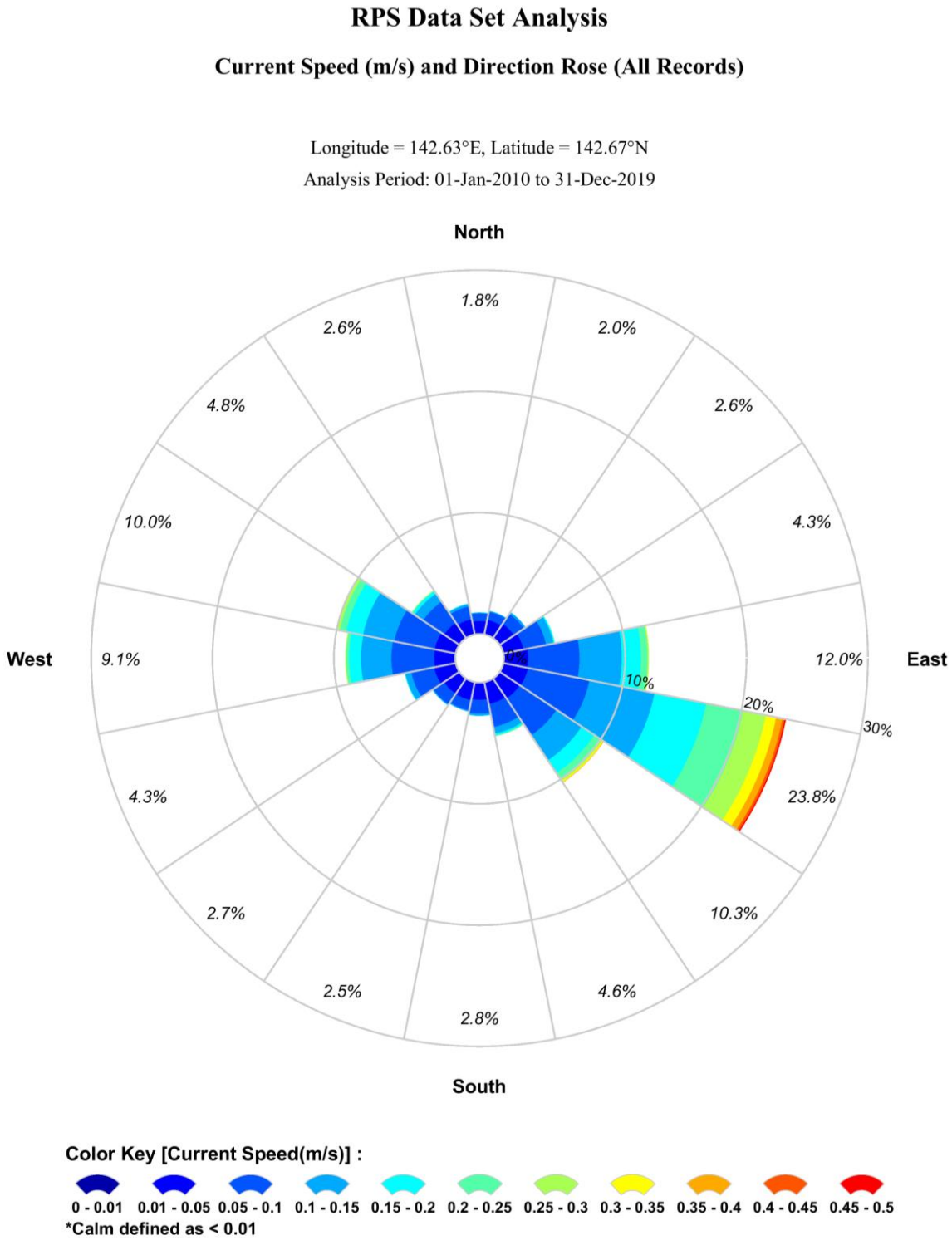

Figure 3.14 Total surface current rose plot (at 50m below surface) nearby the Elanora-1 ST1 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

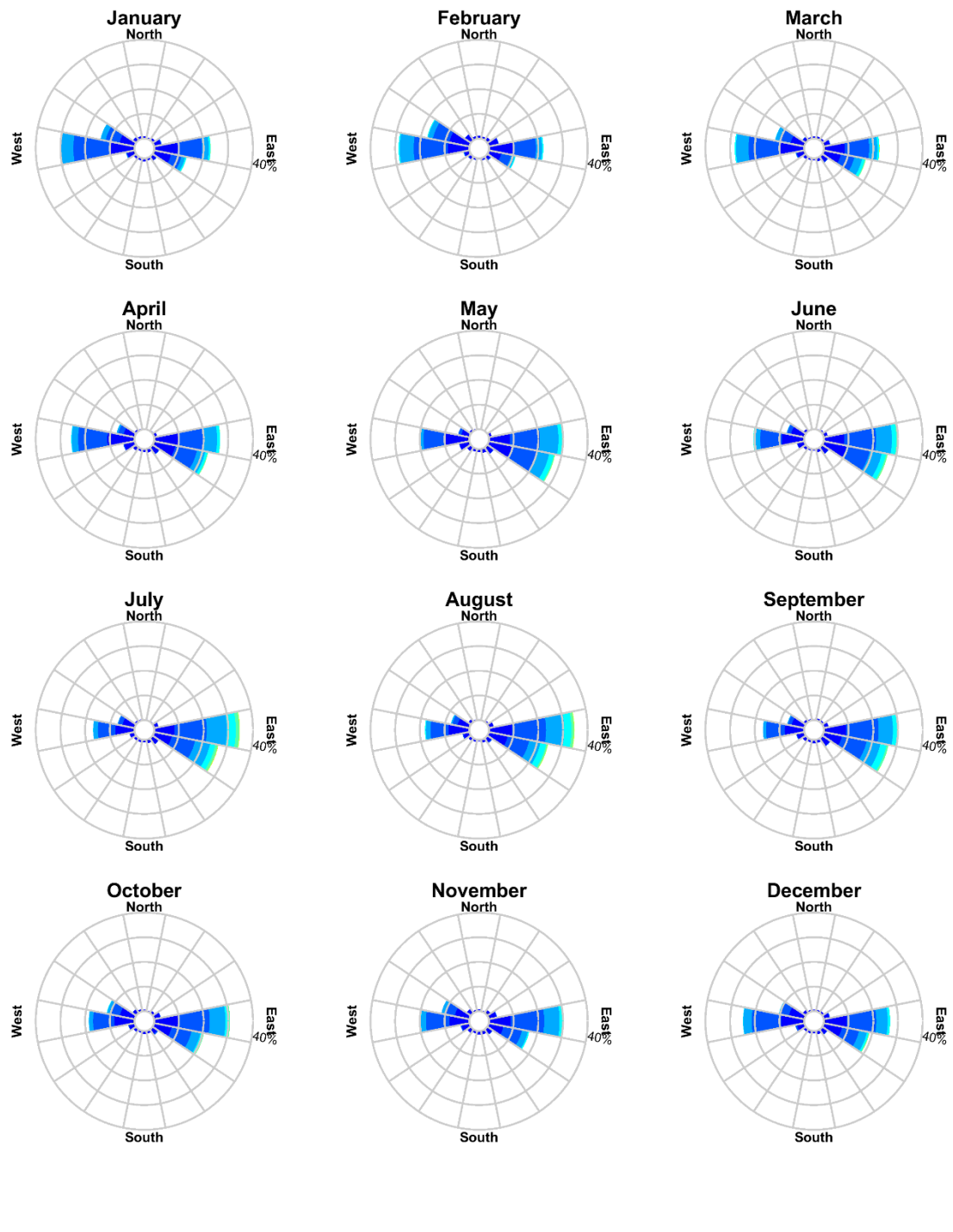

Figure 3.15 Monthly surface current rose plots (at 50m below surface) nearby the Pecten East-2 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

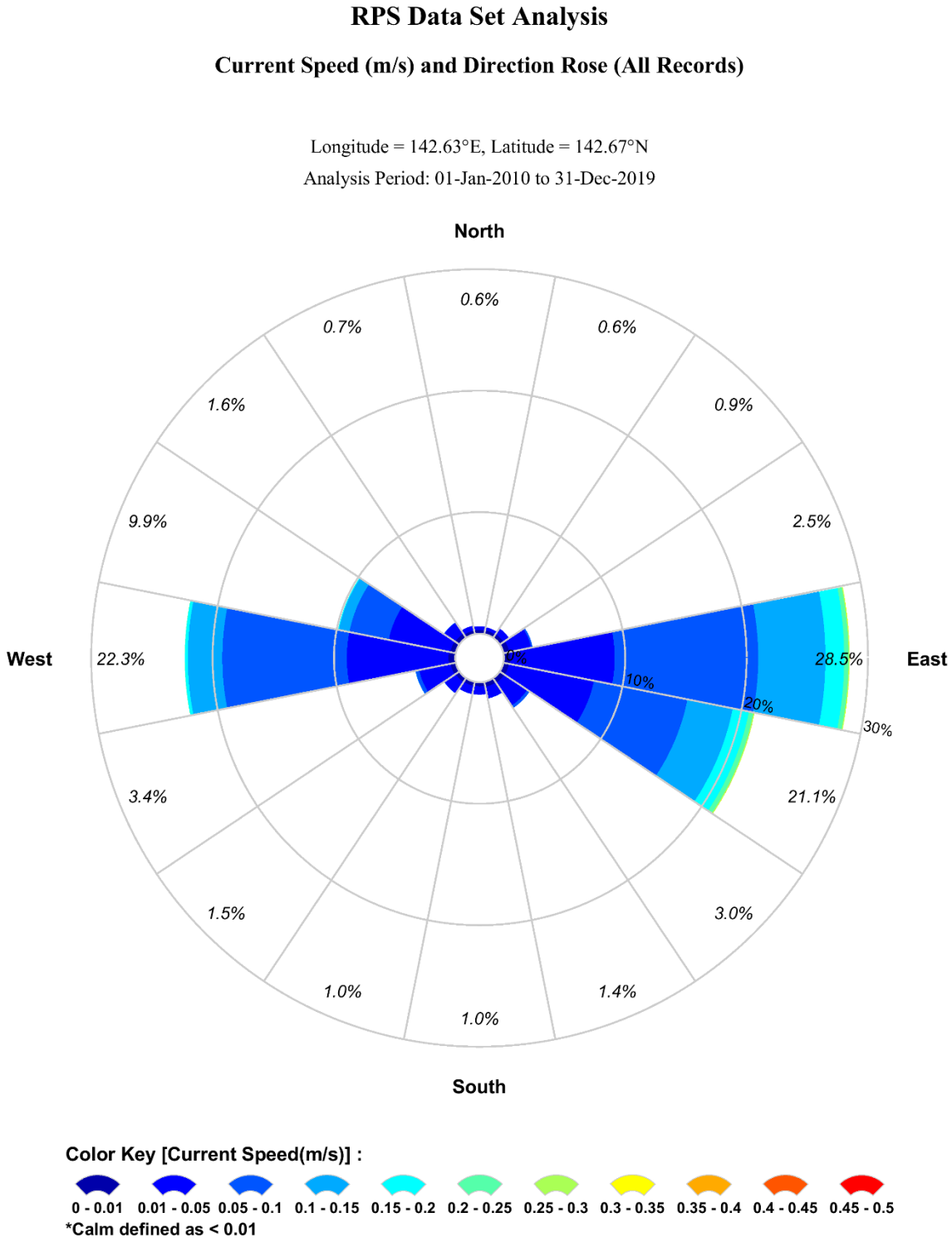

Figure 3.16 Total surface current rose plot (at 50m below surface) nearby the Pecten East-2 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

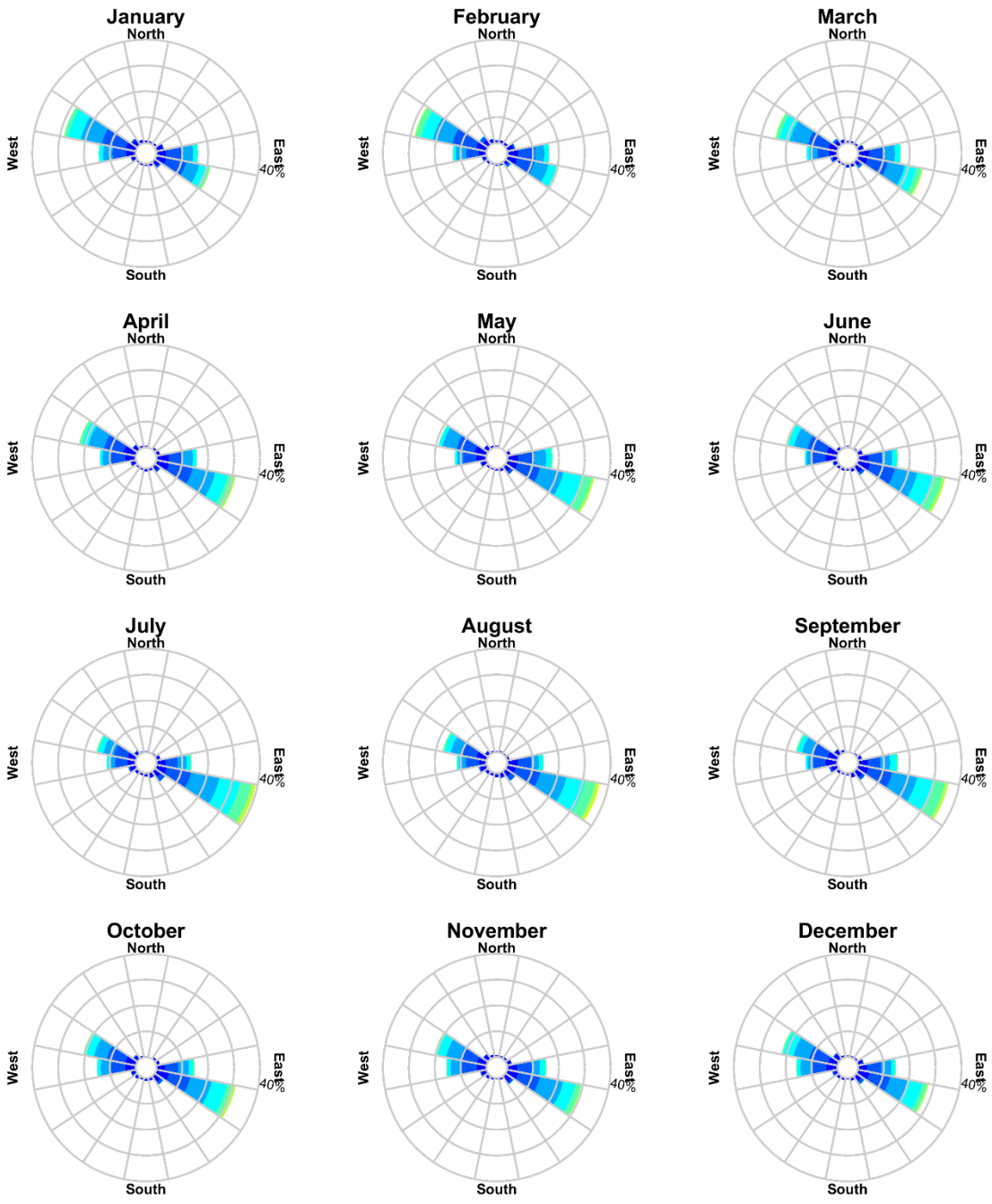

Figure 3.17 Monthly surface current rose plots (at 50m below surface) nearby the Annie-2 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

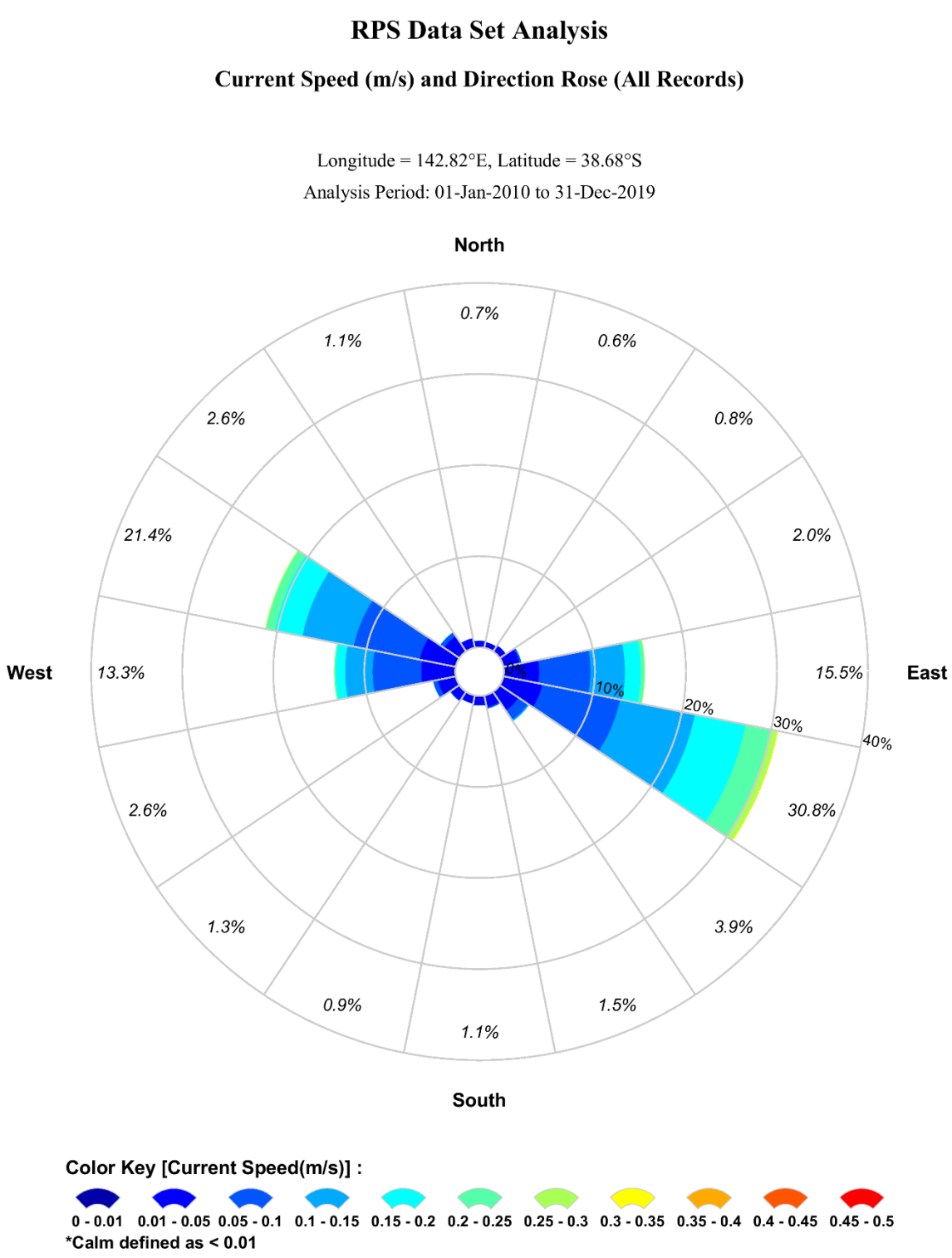

Figure 3.18 Total surface current rose plot (at 50m below surface) nearby the Annie-2 well derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

4 WIND DATA

High resolution wind data for the years 2010 to 2019 (inclusive) was sourced from the National Centre for Environmental Prediction (NCEP) Climate Forecast System Reanalysis dataset (CFSR; see Saha et al., 2010). The CFSR wind model is a fully coupled, data-assimilative hindcast model representing the interaction between the earth's oceans, land, and atmosphere. The gridded wind data output is available at ¼ of a degree resolution (~33 km) and 1-hourly time intervals. Figure 4.1 shows the spatial resolution of the wind field used as input into the oil spill model.

Table 4.1 to Table 4.3 present the monthly average and maximum winds derived from a CFSR wind node nearby the Elanora-1 ST1, Pecten East-2 and Annie-2 wells. The wind data demonstrated average monthly wind speeds ranging from 14 knots during summer months to 19 knots during winter months at Elanora-1 ST1 (Isabella), whilst near Pecten East-2 and Annie-2 seasonal wind speeds were 10 knots and 13 knots respectively (same wind node). Maximum monthly speeds ranged between 39 knots (January) and 53 knots (June) at Elanora-ST1 and 30 knots (January and November) and 42 knots (June) nearby Pecten East-2 and Annie-2. The dominant wind direction varied throughout the year, though westerly winds tended to dominate nearby all release locations during September to November.

Figure 4.2 to Figure 4.7 show the monthly and total wind rose distributions derived from the CFSR data for the selected node nearby the release locations.

Note that the atmospheric convention for defining wind direction, that is, the direction the wind blows from, is used to reference wind direction throughout this report. Each branch of the rose represents wind coming from that direction, with north to the top of the diagram. Sixteen directions are used. The branches are divided into segments of different colour, which represent wind speed ranges from that direction. Speed ranges of 5 knots are typically used in these wind roses. The length of each segment within a branch is proportional to the frequency of winds blowing within the corresponding range of speeds from that direction.

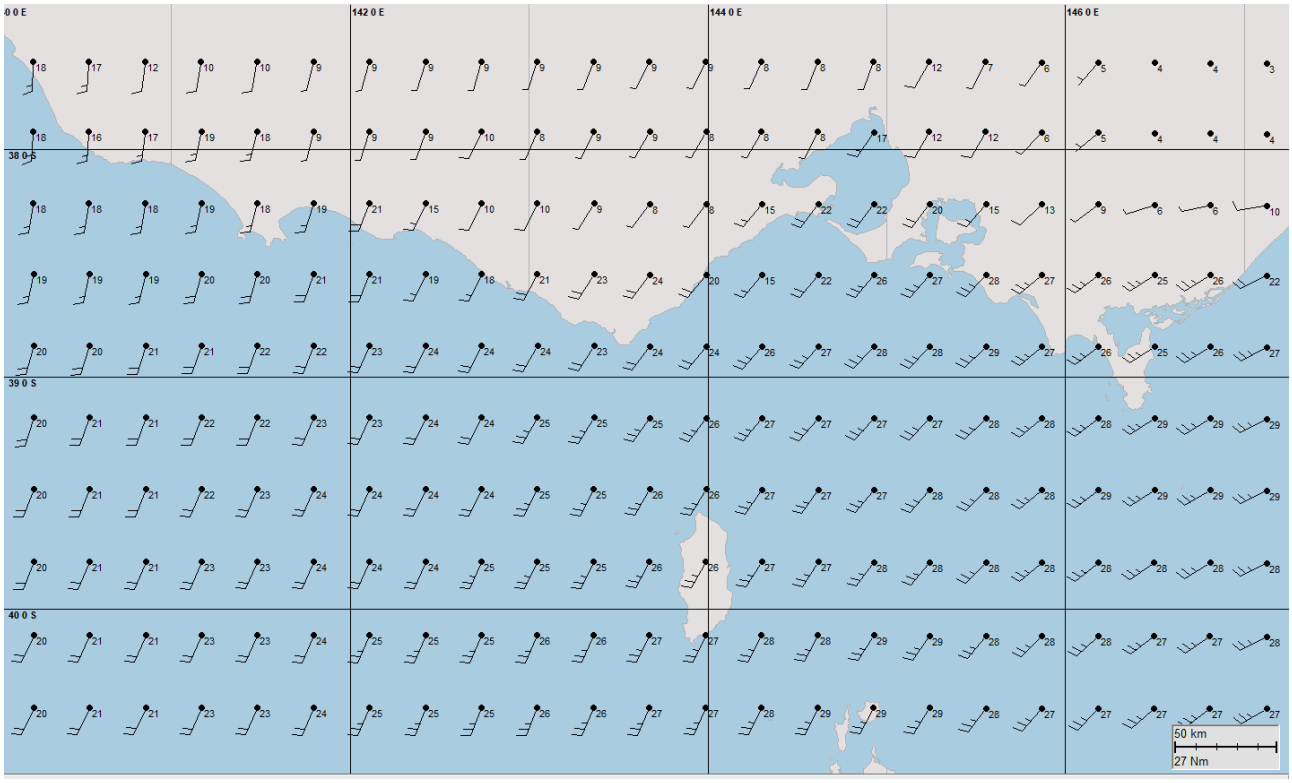

Figure 4.1 Spatial resolution of the CFSR modelled wind data used as input into the oil spill model.

Table 4.1 Predicted average and maximum winds representative for the selected node nearby the Elanora-1 ST1 well. Data derived from CFSR hindcast model from 2010–2019 (inclusive).

Month	Average wind speed (knots)	Maximum wind speed (knots)	General direction(s) (From)
January	14	39	South
February	14	42	Southeast
March	14	44	West
April	14	42	West
May	17	45	West
June	17	53	West-northwest
July	19	46	West-northwest
August	19	47	West
September	17	49	West
October	16	45	West
November	15	44	West
December	14	40	West-southwest
Minimum	**14**	**39**	-
Maximum	**19**	**53**	

Table 4.2 Predicted average and maximum winds representative for the selected node nearby the Pecten East-2 well. Data derived from CFSR hindcast model from 2010–2019 (inclusive).

Month	Average wind speed (knots)	Maximum wind speed (knots)	General direction(s) (From)
January	10	30	Southeast
February	10	31	Southeast
March	10	34	Southeast
April	10	33	West
May	11	32	Northwest
June	11	42	North-northwest
July	13	35	North-northwest
August	13	39	Northwest
September	12	41	West
October	11	31	West
November	10	30	West
December	10	31	West
Minimum	**10**	**30**	-
Maximum	**13**	**42**	

Table 4.3 Predicted average and maximum winds representative for the selected node nearby the Annie-2 well. Data derived from CFSR hindcast model from 2010–2019 (inclusive).

Month	Average wind speed (knots)	Maximum wind speed (knots)	General direction(s) (From)
January	10	30	Southeast
February	10	31	Southeast
March	10	34	Southeast
April	10	33	West
May	11	32	Northwest
June	11	42	North-northwest
July	13	35	North-northwest
August	13	39	Northwest
September	12	41	West
October	11	31	West
November	10	30	West
December	10	31	West
Minimum	**10**	**30**	-
Maximum	**13**	**42**	

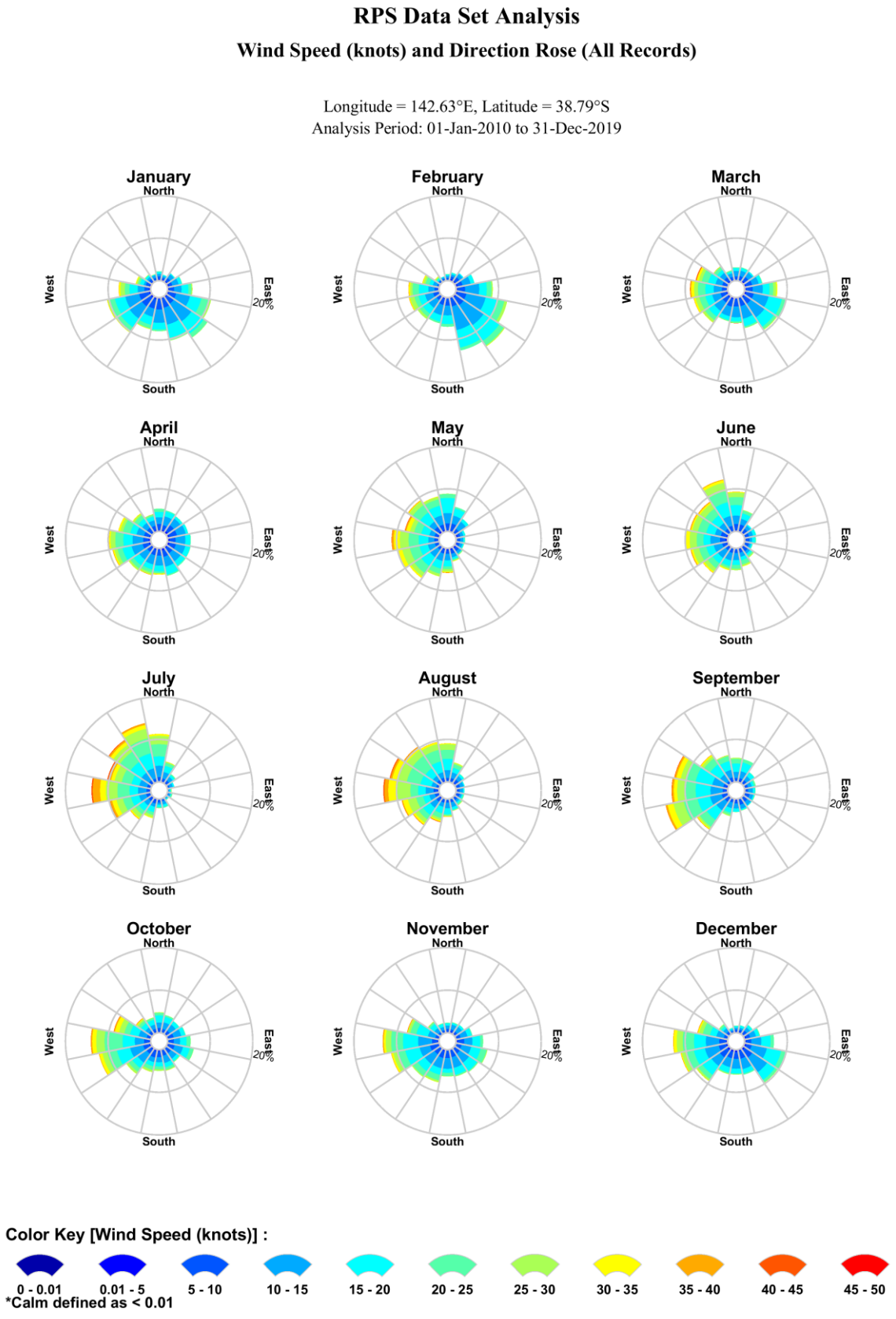

Figure 4.2 Modelled monthly wind rose distributions from 2010–2019 (inclusive) for the node nearby the Elanora-1 ST1 well.

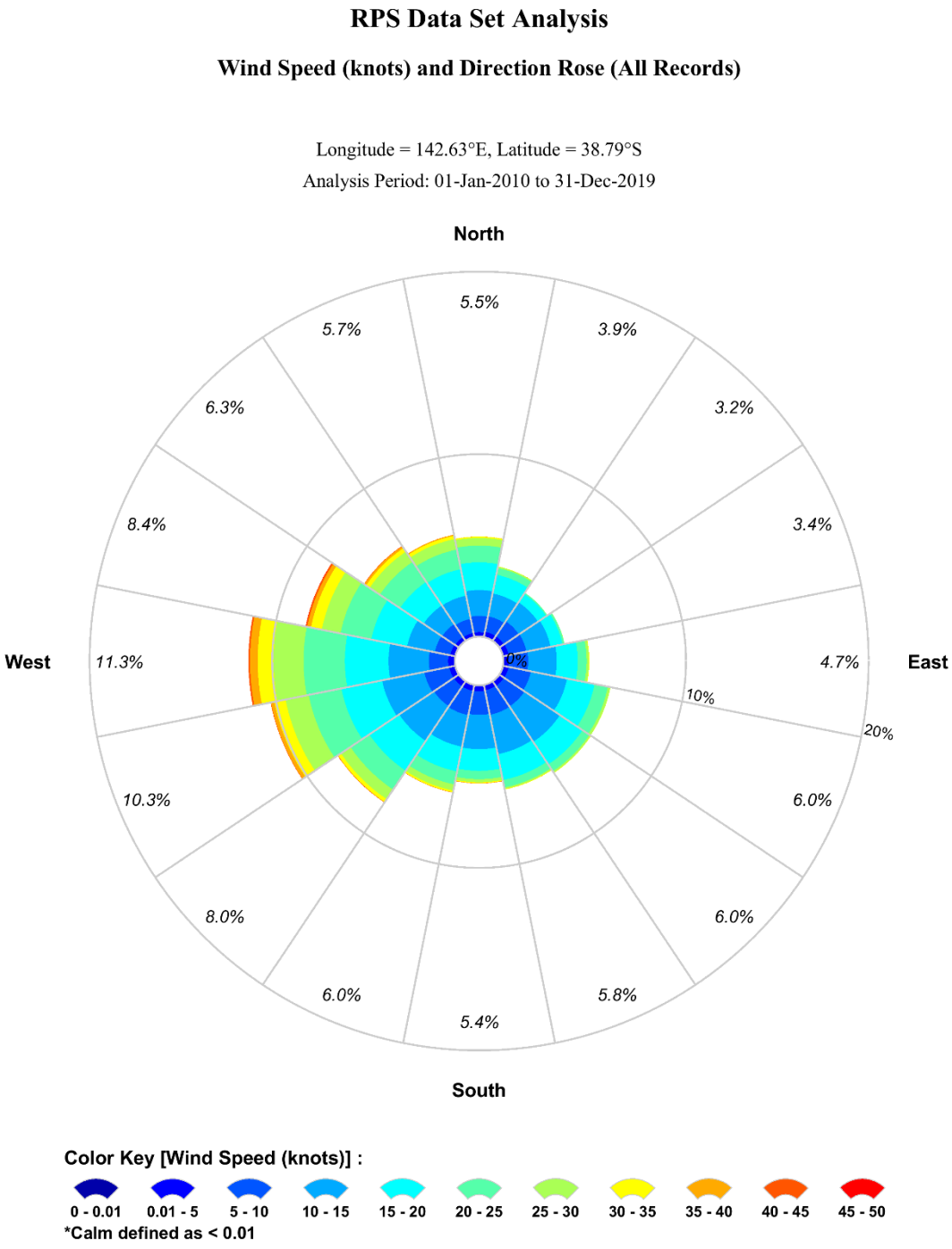

Figure 4.3 Modelled total wind rose distributions from 2010–2019 (inclusive) for the node nearby the Elanora-1 ST1 well.

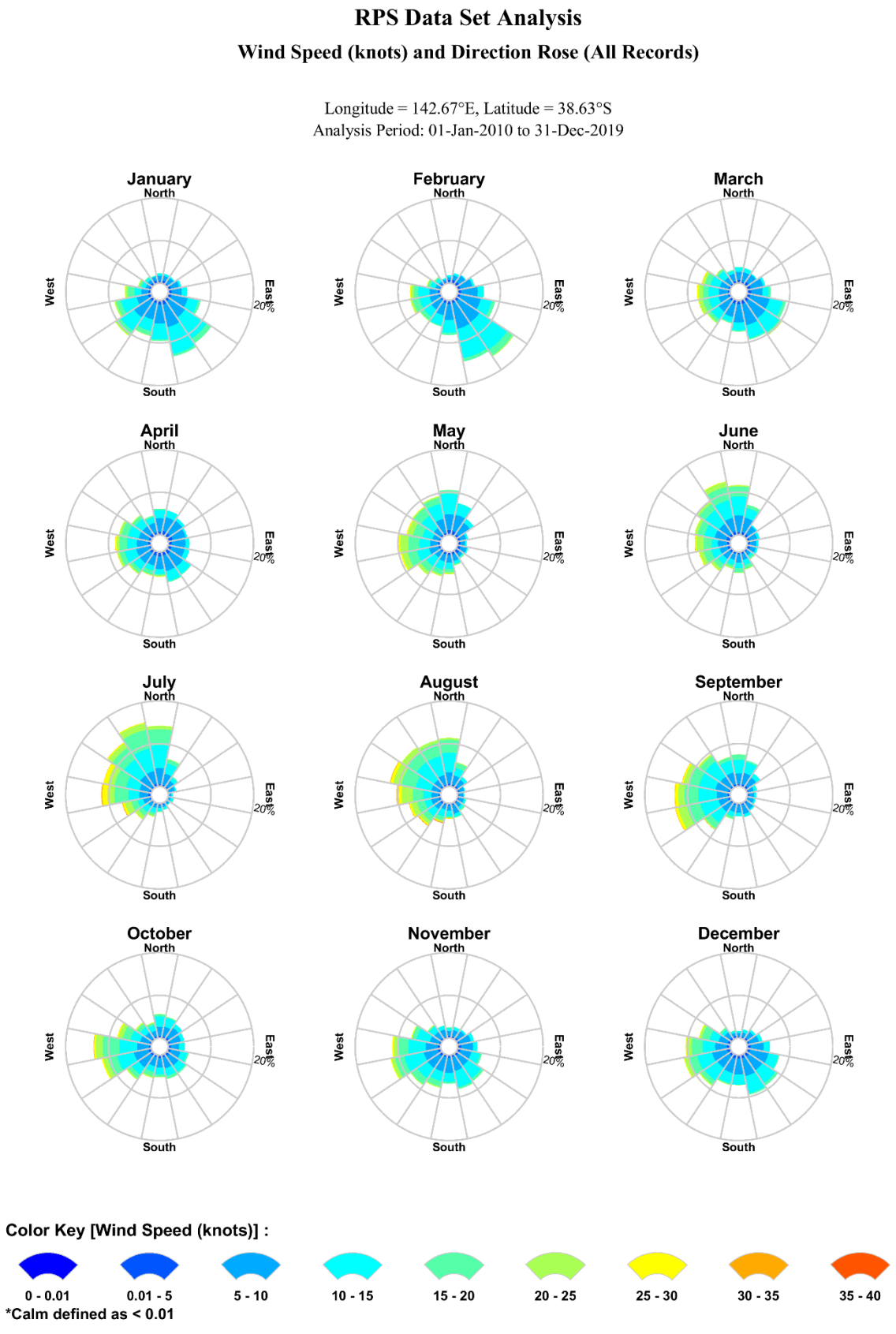

Figure 4.4 Modelled monthly wind rose distributions from 2010–2019 (inclusive) for the node nearby the Pecten East-2 well.

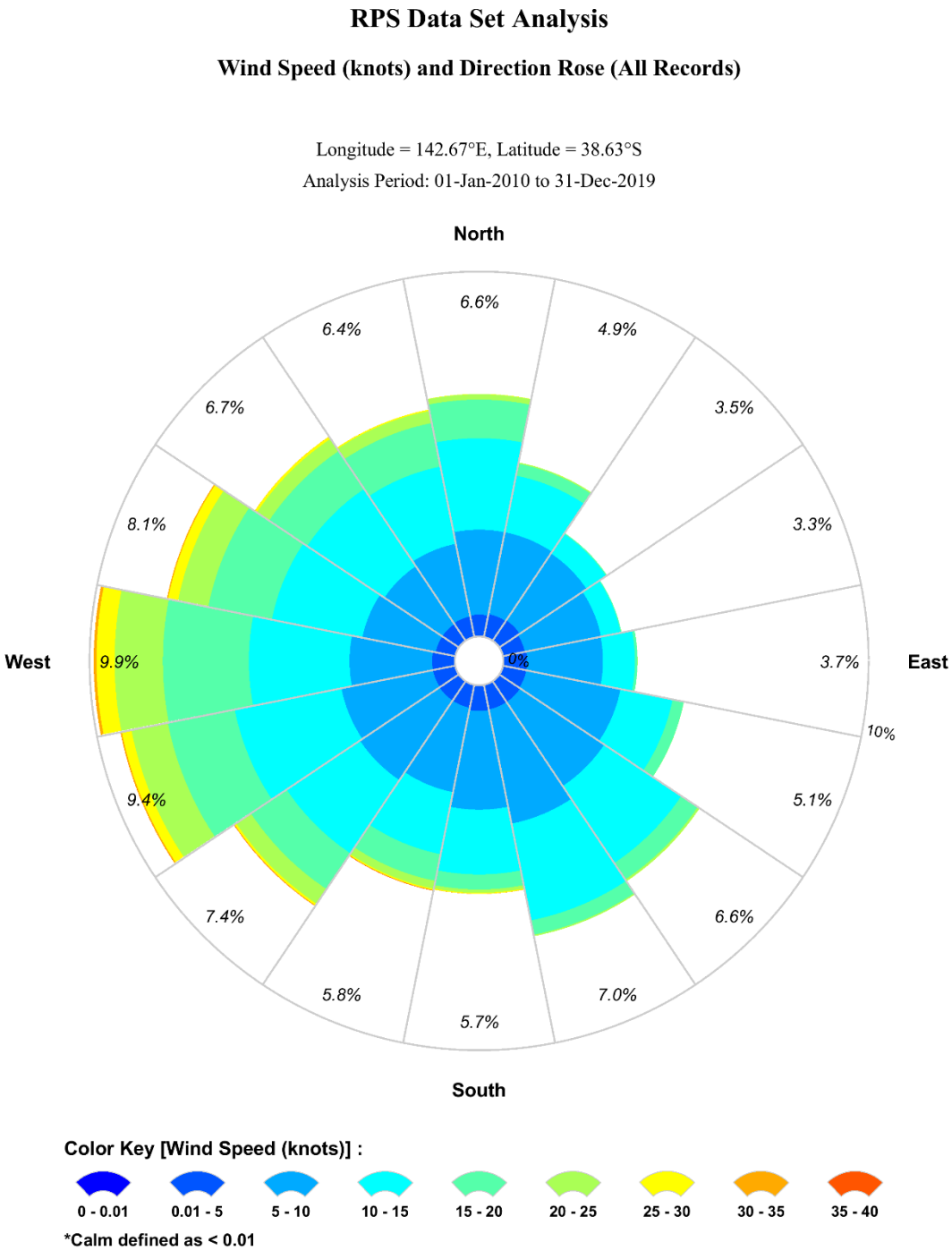

Figure 4.5 Modelled total wind rose distributions from 2010–2019 (inclusive) for the node nearby the Pecten East-2 well.

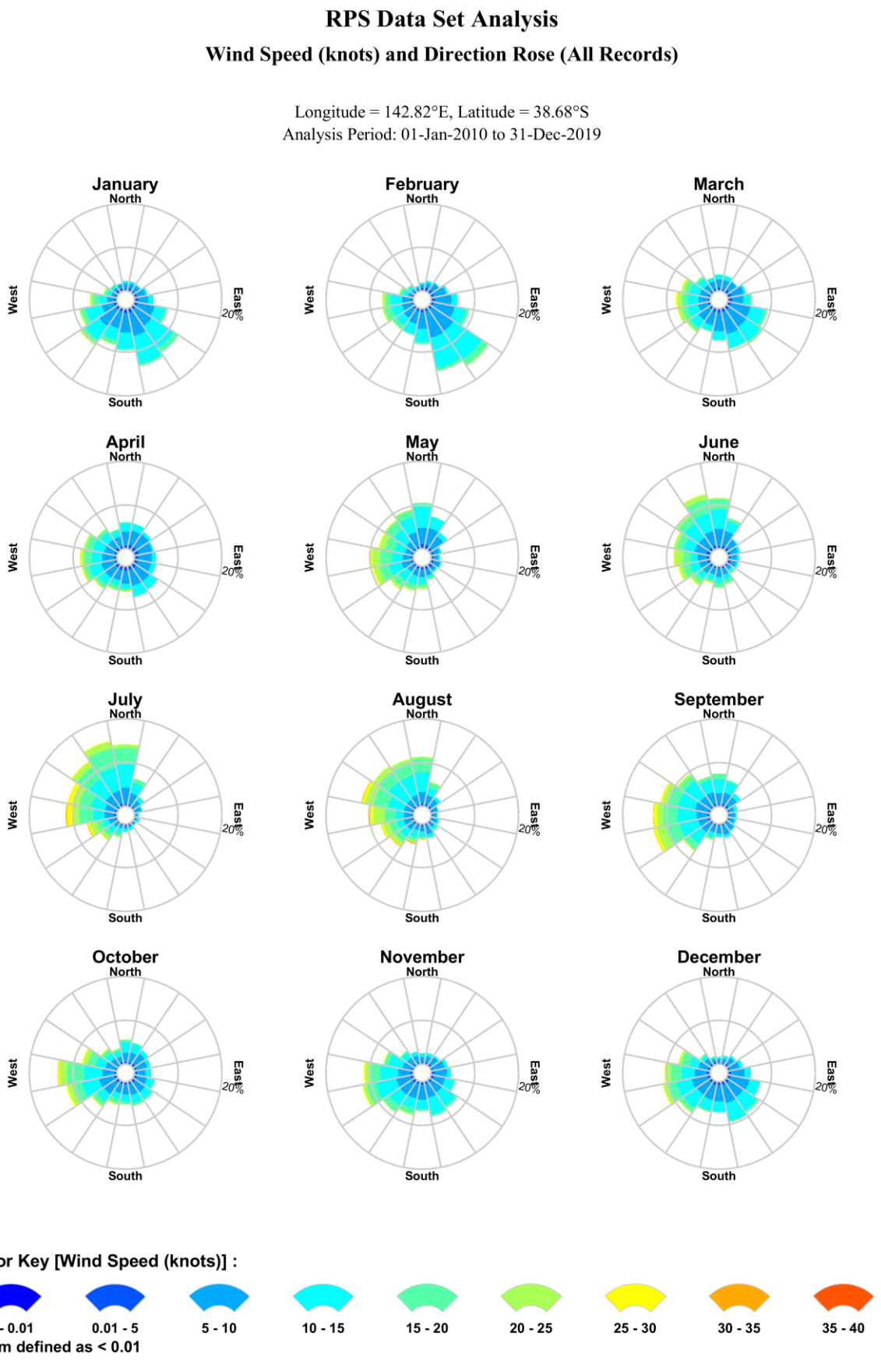

Figure 4.6 Modelled monthly wind rose distributions from 2010–2019 (inclusive) for the node nearby the Annie-2 well.

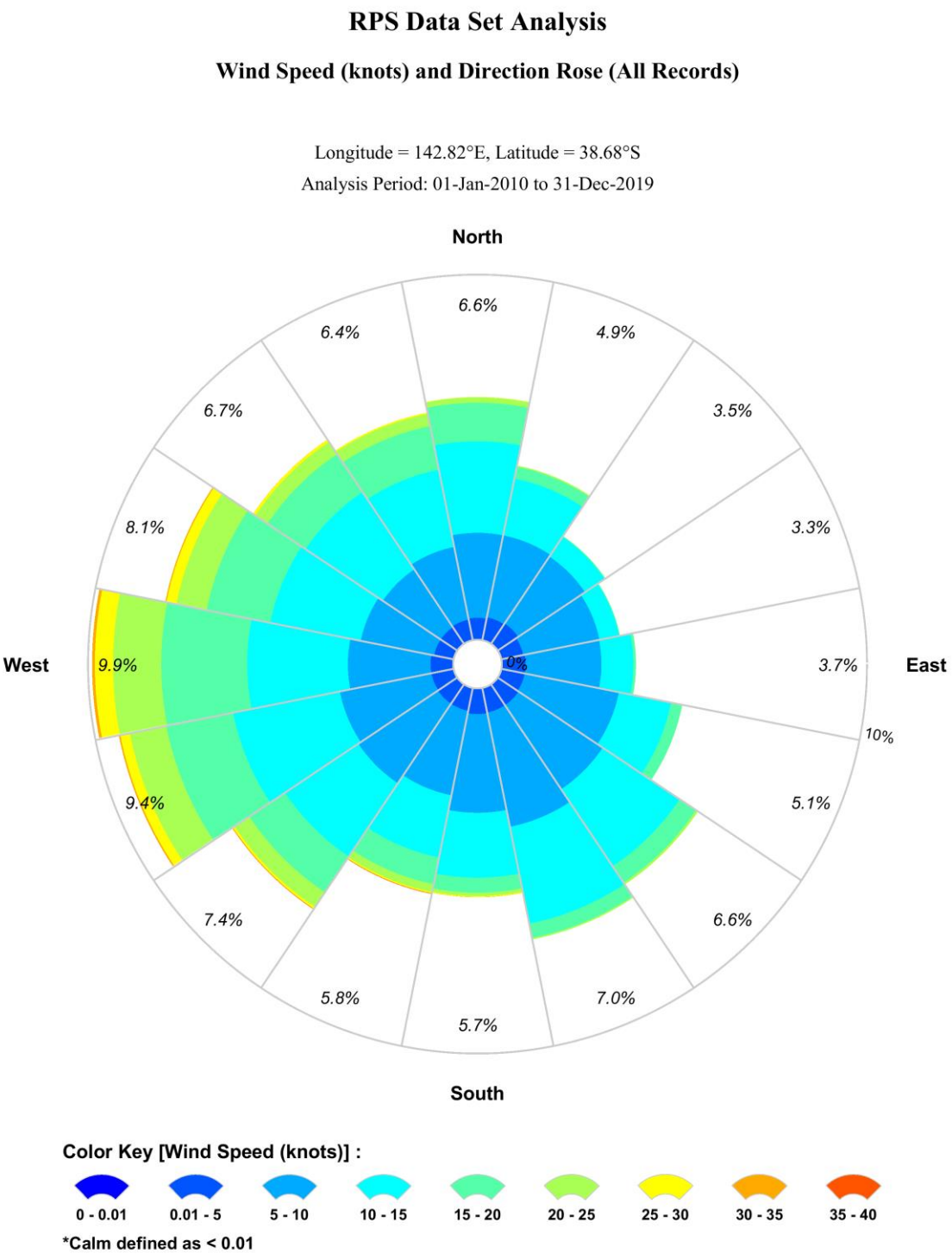

Figure 4.7 Modelled total wind rose distributions from 2010–2019 (inclusive) for the node nearby the Annie-2 well.

5 WATER TEMPERATURE AND SALINITY

The monthly sea temperature and salinity profiles of the water column within the study was obtained from the World Ocean Atlas 2018 database produced by the National Oceanographic Data Centre (National Oceanic and Atmospheric Administration) and its co-located World Data Center for Oceanography (see Levitus et al., 2013). These parameters were used as factors to inform the weathering, movement, and evaporative loss of hydrocarbon spills in the surface and sub-surface layers.

Figure 5.1 to Figure 5.3 illustrate the vertical profile of sea temperature and salinity nearby the release locations.

Table 5.1 to Table 5.3 present the sea temperature and salinity of the surface layer nearby the Elanora-1 ST1, Pecten East-2 and Annie-2 wells, respectively. The monthly average sea surface temperatures ranged between 13.5°C (September) and 18.9°C (February) nearby Elanora-1 ST1, and 13.3°C (September) and 18.3°C (January) nearby Pecten East-2 and 13.3°C (September) and 18.5°C (March) nearby Annie-2. The monthly average surface salinity values remain relatively consistent ranging between 35.3 psu and 35.5 psu across all three release locations.

Table 5.1 Monthly average sea surface temperature and salinity in the Elanora-1 ST1 well area.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (ºC)	18.3	18.9	18.8	17.1	15.8	15.1	14.8	14.1	13.5	13.9	14.7	16.0
Salinity (psu)	35.4	35.4	35.4	35.3	35.4	35.4	35.5	35.5	35.4	35.4	35.4	35.3

Table 5.2 Monthly average sea surface temperature and salinity in the Pecten East-2 well area.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (ºC)	18.3	18.1	18.0	17.1	15.7	14.8	14.4	13.8	13.3	14.0	15.0	16.1
Salinity (psu)	35.4	35.4	35.3	35.3	35.4	35.4	35.5	35.4	35.4	35.4	35.3	35.4

Table 5.3 Monthly average sea surface temperature and salinity in the Annie-2 well area.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (ºC)	18.3	18.4	18.5	17.1	15.7	14.7	14.2	13.7	13.3	14.0	14.9	16.1
Salinity (psu)	35.4	35.4	35.4	35.3	35.3	35.4	35.5	35.5	35.4	35.5	35.4	35.3

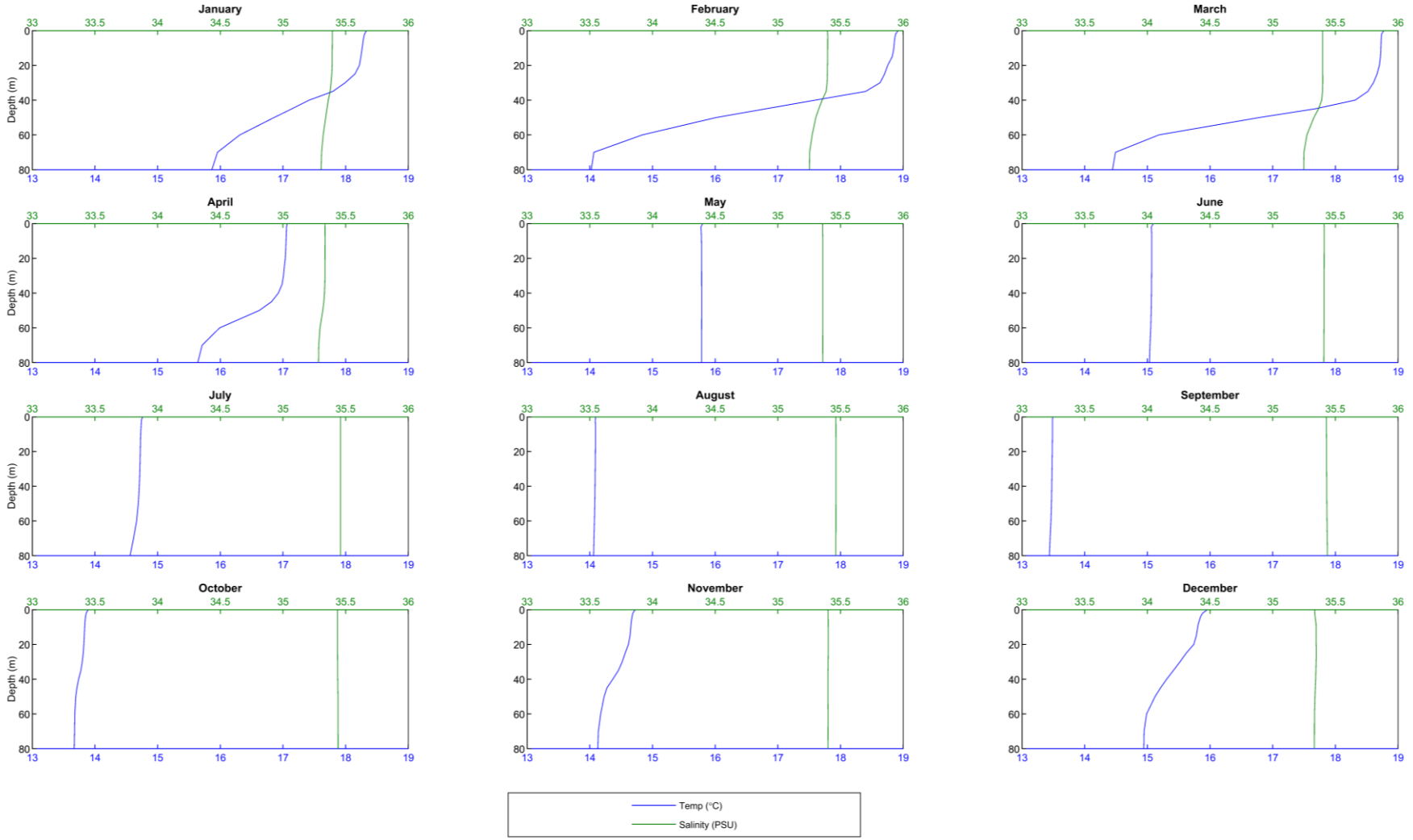

Figure 5.1 Temperature and salinity profiles nearby the Elanora-1 ST1 well.

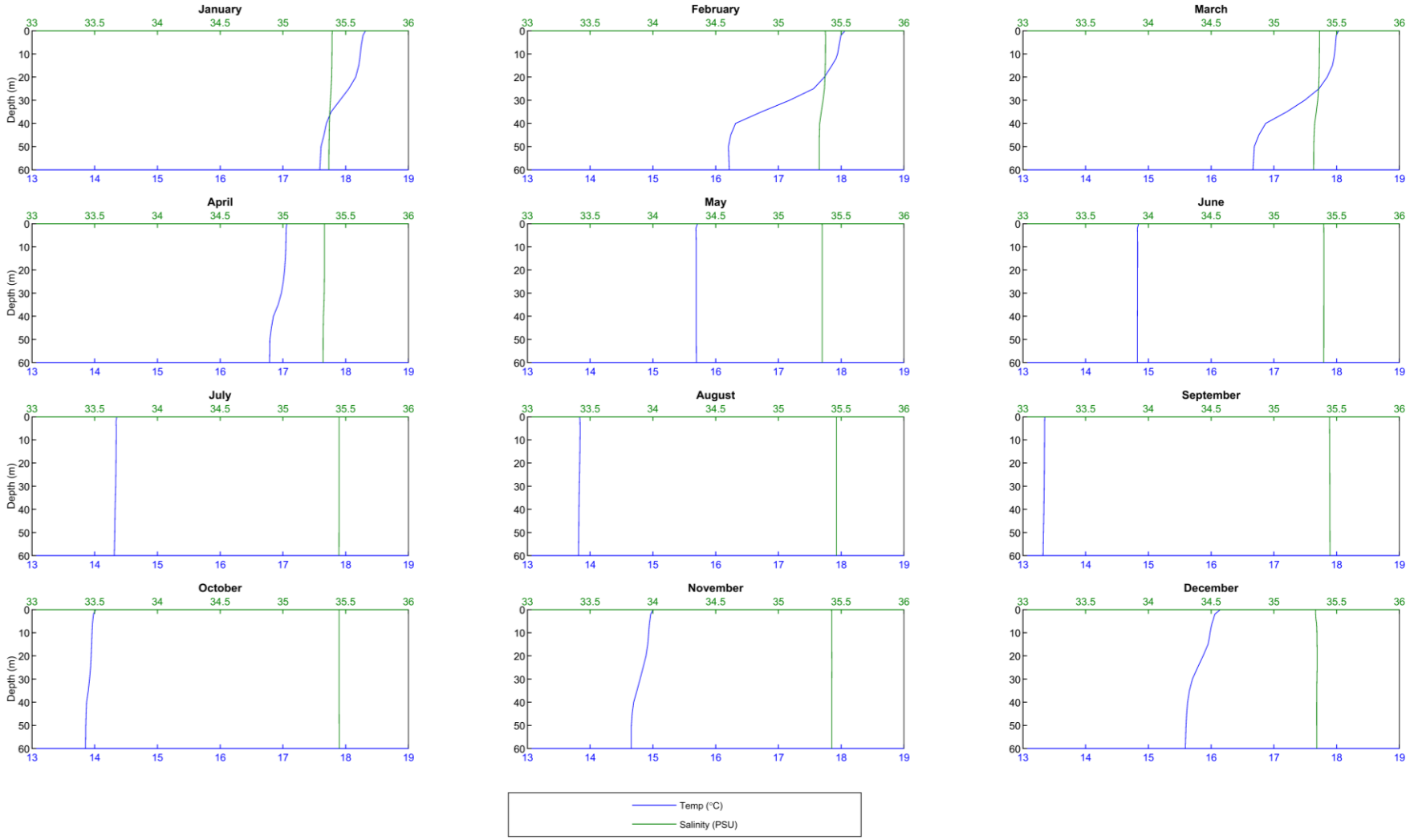

Figure 5.2 Temperature and salinity profiles nearby the Pecten East-2 well.

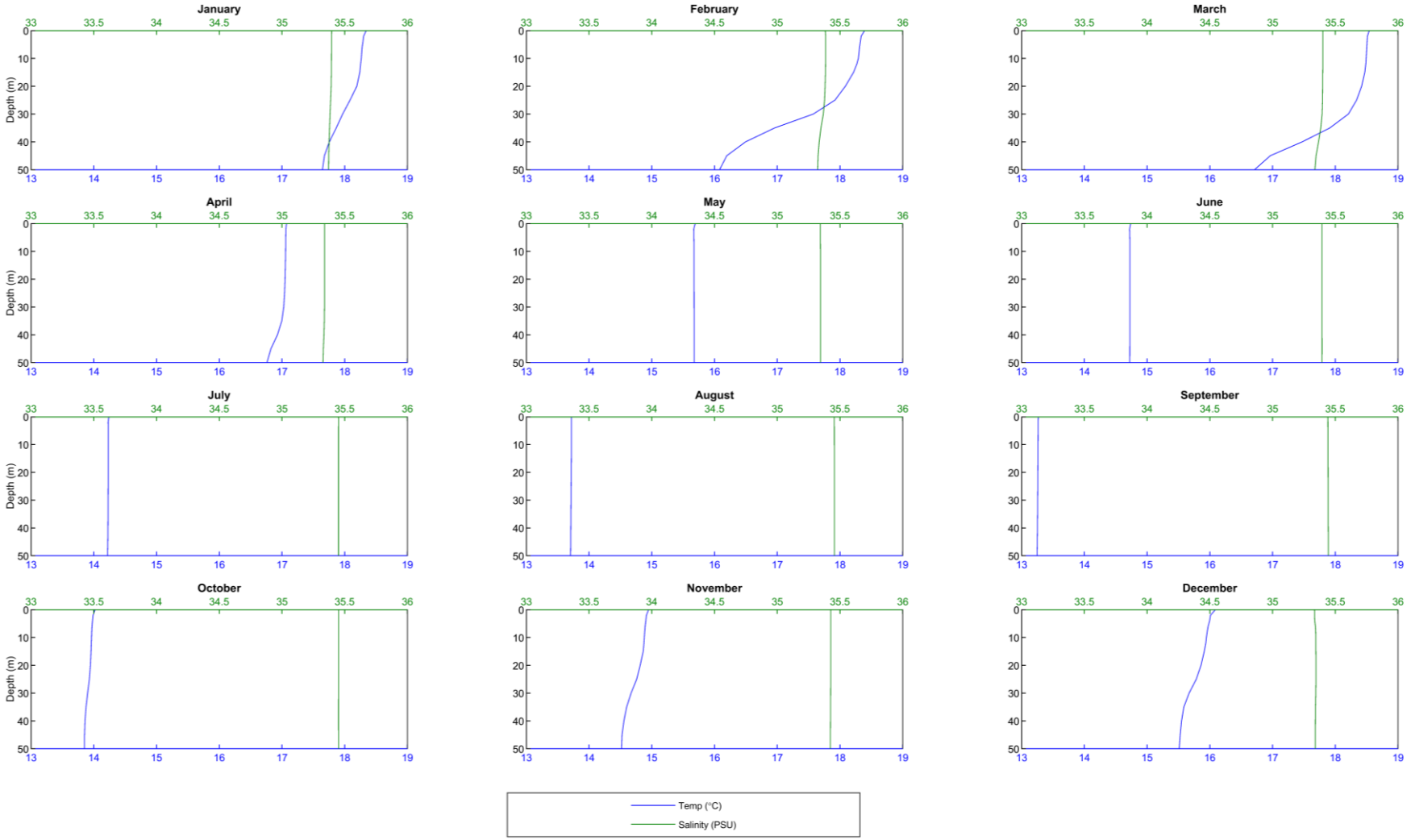

Figure 5.3 Temperature and salinity profiles nearby the Annie-2 well.

6 SUBSEA PLUME MODEL – OILMAP DEEP

In the event of an uncontrolled subsea LOWC, the gas and condensate will initially behave like a jet, which dissipates in the water column over a short distance (<10 m). The escaping condensate shears into small droplets due to turbulence generated by passing through the exit hole and subsequent turbulence generated in the plume jet. The size-distribution of the droplets varies with the exit velocity and viscosity of the condensate. Following this phase, the density and buoyancy difference of the gas and condensate mixture relative to the surrounding waters, forces the plume upward. As the plume rises, the volume of gas will increase due to reduction of water pressure, with gas bubbles dividing into an increasing number of bubbles due to the shearing effect exerted by the water column.

In shallow water (<150 m) the rising plume of gas and condensate will tend to reach the sea surface before deflecting away from the centre of the plume (Spaulding et al., 2000). Figure 6.1 conceptually illustrates the various stages of a subsea release of oil and gas.

OILMAP Deep model (Spaulding et al., 2015) was used to simulate the near-field behaviour of the gas-condensate subsea release in two phases – the initial jet phase and the buoyant plume phase. The initial jet phase is predominately driven by the exit velocity. During this phase, the condensate droplet-size-distributions are calculated for a range of classes or bins. Next, the plume model predicts the rise dynamics of the condensate and gas plumes to calculate at which point gas lift will be lost (i.e. the trapping height).

Outputs which include the plume trapping height, plume diameter and droplet size distribution are used as input to the SIMAP model to simulate the rise and dispersion of the condensate droplets from this point onwards.

More details on the OILMAP-DEEP model, can be found in Spaulding et al. (2015). The model has been validated against observations from Deepwater Horizon as well as small and large-scale laboratory studies on subsurface oil releases (Brandvik et al., 2013, 2014; Belore, 2014; Spaulding et al., 2015; Li et al., 2017).

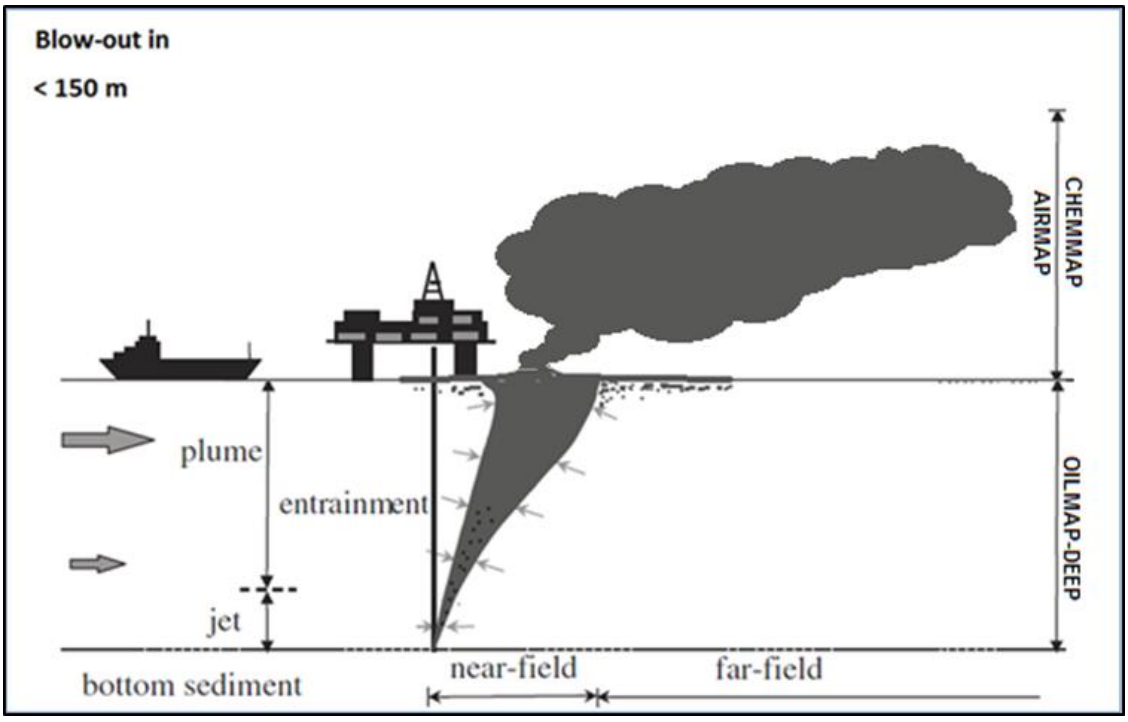

Figure 6.1 Example of a subsea plume and the various stages of the plume in the water column (Source: ASA, 2011).

Table 6.1 presents the input parameters and key results for the subsea plume modelling. Note a depleting release rate was assessed. The subsea modelling showed that in the event of a LOWC, the amalgamated gas and condensate would propel rapidly upward from the seabed and rupture the sea surface at all three locations assessed.

Table 6.1 Input data and key results for the subsea plume modelling.

Input Variable	Value		
Scenario	LOWC at Elanora-1 ST1 (Isabella)	LOWC at Pecten East-2	LOWC at Annie-2
Water depth (m)	56 (from top of the BOP stack)	34 (from top of the BOP stack)	36 (from top of the BOP stack)
Top of release diameter (inch)	18.75	18.75	18.75
Condensate discharge rate (stb/day)	1326 (day 1) depleting to 798 (day 102)	1250 (day 1) depleting to 505 (day 102)	878 (day 1) depleting to 453 (day 104)
Gas rate (MMscf/day)	663 (day 1) depleting to 399 (day 102)	625 (day 1) depleting to 253 (day 102)	438.9 (day 1) depleting to 226.4 (day 104)
Formation water flow rate (stb/day)	356 (day 1) depleting to 293 (day 102)	496 (day 1) depleting to 353 (day 102)	444.9 (day 1) depleting to 298.0 (day 104)
Key results			
Plume execution depth (m BMSL^)	0 (Breach the sea surface)	0 (Breach the sea surface)	0 (Breach the sea surface)
Droplet sizes (µm)	1,399 to 6,044 (day 1) to 1,761 to 7,607 (day 104)	1,268 to 5,479 (day 1) to 1,884 to 8,137 (day 104)	1,584 to 6,843 (day 1) to 2,056 to 8,882 (day 104)

^Below mean sea level

7 OIL SPILL MODEL – SIMAP

Modelling of the fate of oil was performed using the Spill Impact Mapping Analysis Program (SIMAP). SIMAP is designed to simulate the fate and effects of spilled hydrocarbons for both the surface and subsurface releases (Spaulding et al., 1994; French et al., 1999; French-McCay, 2003, 2004; French-McCay et al., 2004).

SIMAP has been used to predict the weathering and fate of oil spills during and after major incidents including: Montara (Australia) well blowout August 2009 in the Timor Sea (Asia-Pacific ASA, 2010); Macondo (USA) well blowout April 2010 in the Gulf of Mexico; Bohai Bay (China) oil spill August 2011; and the pipeline oil spill July 2013 in the Gulf of Thailand.

The SIMAP model calculates the transport, spreading, entrainment, evaporation and decay of surface hydrocarbon slicks as well as the entrained and dissolved oil components in the water column, either from surface slicks or from oil discharged subsea. The movement and weathering of the spilled oil is calculated for specific oil types. Input specifications for oil mixtures include the density, viscosity, pour point, distillation curve (volume lost versus temperature) and the aromatic/aliphatic component ratios within given boiling point (BP) ranges.

SIMAP is a three-dimensional model that allows for various response actions to be modelled including oil removal from skimming, burning, or collection booms, and surface and subsurface dispersant application.

The SIMAP oil spill model includes advanced weathering algorithms, specifically focussed on unique oils that tend to form emulsions and/or tar balls. The weathering algorithms are based on 5 years of extensive research conducted in response to the Deepwater Horizon oil spill in the Gulf of Mexico (French-McCay et al., 2015).

Biodegradation is included in the oil spill model. In the model, SIMAP, degradation is calculated for the surface slick, deposited oil on the shore, the entrained oil and dissolved constituents in the water column, and oil in the sediments. For surface oil, water column oil and sedimented oil a first order degradation rate is specified. Biodegradation rates are relatively high for hydrocarbons in dissolved state or in dispersed small droplets.

7.1 Stochastic Modelling

For the stochastic modelling presented herein, 100 oil spills (per season) were modelled for each scenario using the same spill information (release location, spill volume, duration and oil type) but with varied start dates. During each simulation, the model records whether any grid cells are exposed to any oil concentrations, the concentrations involved and the elapsed time before exposure. The results of all 100 oil spill simulations (per season) were analysed to determine the following statistics for every grid cell:

- Exposure load (concentrations and volumes);
- Minimum time before exposure;
- Probability of contact above defined concentrations;
- Volume of oil that may accumulate on shorelines from any single simulation;
- Concentration that might occur on sections of individual shorelines;
- Exposure to dissolved hydrocarbons in the water column; and
- Exposure to entrained hydrocarbons in the water column.

7.2 Floating, Shoreline and In-Water Thresholds

The thresholds and their relationship to exposure for the sea surface, shoreline and water column (entrained and dissolved hydrocarbons) are presented in Sections 7.2.1 to 7.2.3. Supporting justifications of the adopted thresholds applied during the study and additional context relating to the area of potential exposure are also provided. It is important to note that the thresholds herein are based on NOPSEMA (2019).

7.2.1 Floating Oil Exposure Thresholds

The modelling results can be presented to any levels; therefore, thresholds have been specified (based on scientific literature) to record floating oil exposure to the sea-surface at meaningful levels only, described in the following paragraphs.

The low threshold 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) (see Table 7.1). Figure 7.1 shows photographs highlighting the difference in appearance between a silvery sheen, rainbow sheen and metallic sheen. 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. Table 7.1 provides a description of the appearance in relation to exposure zone thresholds used to classify the zones of floating oil exposure.

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).

Scholten et al. (1996) and Koops et al. (2004) indicated that at oil concentrations on the sea surface of 25 g/m^2 (or greater), would be harmful for all birds that have landed in an oil film due to potential contamination of their feathers, with secondary effects such as loss of temperature regulation and ingestion of oil through preening. The appearance of oil at this thickness is also described as metallic sheen (Bonn Agreement, 2009). For this study the high exposure threshold was set to 50 g/m^2 and above based on NOPSEMA (2019). This threshold can also be used to inform response planning.

Table 7.2 defines the thresholds used to classify the zones of floating oil exposure reported herein.

Table 7.1 The Bonn Agreement Oil Appearance Code.

Code	Description Appearance	Layer Thickness Interval (g/m^2 or µm)	Litres per km^2
1	Sheen (silvery/grey)	0.04 – 0.30	40 – 300
2	Rainbow	0.30 – 5.0	300 – 5,000
3	Metallic	5.0 – 50	5,000 – 50,000
4	Discontinuous True Oil Colour	50 – 200	50,000 – 200,000
5	Continuous True Oil Colour	≥ 200	≥ 200,000

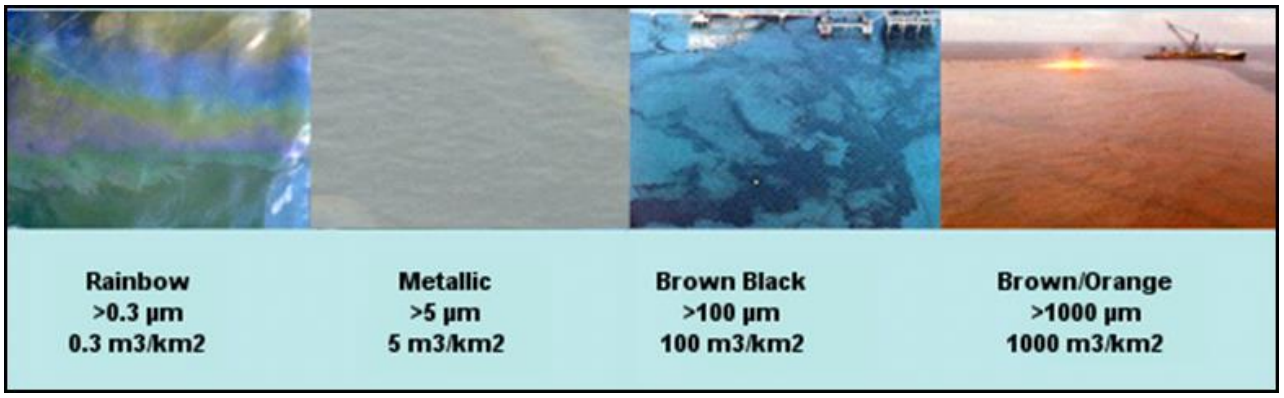

Figure 7.1 Photographs showing the difference between oil colour and thickness on the sea surface (source: adapted from Oil Spill Solutions, 2015).

Table 7.2 Floating oil exposure thresholds used in this report (in alignment with NOPSEMA (2019)).

Threshold level	Floating oil (g/m^2)	Description
Low	1	Approximates range of socioeconomic effects and establishes planning area for scientific monitoring
Moderate	10	Approximates lower limit for harmful exposures to birds and marine mammals
High	50	Approximates surface oil slick and informs response planning

7.2.2 Shoreline Accumulation Thresholds

There are many different types of shorelines, ranging from cliffs, rocky beaches, sandy beaches, mud flats and mangroves, and each of these influences the volume of oil that can remain 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. A sandy beach shoreline was assumed as the default shoreline type for the modelling herein, as it allows for the highest carrying capacity of oil (of the available open/exposed shoreline types). Hence the results contained herein would be indicative of a worst-case scenario, where the highest volume of oil may be stranded on the shoreline (when compared to other shoreline types, such as exposed rocky shores).

In previous risk assessment studies, French-McCay et al. (2005a; 2005b) used a threshold of 10 g/m^2 to assess the potential for shoreline accumulation. This is a conservative threshold used to define regions of socio-economic impact, such as triggering temporary closures of adjoining fisheries or the need for shore clean-up on beaches or man-made features/amenities (breakwaters, jetties, marinas, etc.). It would equate to approximately 2 teaspoons of hydrocarbon per square meter of shoreline accumulation. The appearance is described as a stain/film. On that basis, the 10 g/m^2 shoreline accumulation threshold has been selected to define the zone of potential “low shoreline accumulation”.

French et al. (1996) and French-McCay (2009) define a shoreline oil accumulation threshold of 100 g/m^2, or above, would potentially harm shorebirds and wildlife (furbearing aquatic mammals and marine reptiles on or along the shore) based on studies for sub-lethal and lethal impacts. This threshold has been used in previous environmental risk assessment studies (see French-McCay, 2003; French-McCay et al., 2004, French-McCay et al., 2011; 2012; NOAA, 2013). Additionally, a shoreline concentration of 100 g/m^2, or above, is the minimum limit that the oil can be effectively cleaned according to the AMSA (2015) guideline. This threshold equates to approximately ½ a cup of oil per square meter of shoreline accumulation. The appearance is described as a thin oil coat. Therefore, 100 g/m^2 has been selected to define the zone of potential “moderate shoreline accumulation”.

Observations by Lin & Mendelssohn (1996), demonstrated that loadings of more than 1,000 g/m^2 of hydrocarbon during the growing season would be required to impact marsh plants significantly. Similar thresholds have been found in studies assessing hydrocarbon impacts on mangroves (Grant et al., 1993; Suprayogi & Murray, 1999). Hence, 1,000 g/m^2 has been selected to define the zone of potential “high shoreline accumulation”. It equates to approximately 1 litre of hydrocarbon per square meter of shoreline accumulation. The appearance is described as a hydrocarbon cover.

It is worth noting that the shoreline accumulation thresholds derived from extensive literature review (outlined in Table 7.3) agree with the commonly used threshold values for oil spill modelling specified in NOPSEMA (2019).

Table 7.3 Thresholds used to assess shoreline accumulation.

Threshold level	Shoreline loading (g/m^2)	Description
Low (socioeconomic/sublethal)	10	Predicts potential for some socio-economic impact
Moderate	100	Loading predicts area likely to require clean-up effort
High	> 1,000	Loading predicts area likely to require intensive clean-up effort

7.2.3 In-water Exposure Thresholds

Oil is a mixture of thousands of hydrocarbons of varying physical, chemical, and toxicological characteristics, and therefore, demonstrate varying fates and impacts on organisms. As such, for in-water exposure, the SIMAP model provides separate outputs for dissolved and entrained hydrocarbons from oil droplets. The consequences of exposure to dissolved and entrained components will differ because they have different modes and magnitudes of effect.

Entrained hydrocarbon concentrations were calculated based on oil droplets that are suspended in the water column, though not dissolved. The composition of this oil would vary with the state of weathering (oil age) and may contain soluble hydrocarbons when the oil is fresh. Calculations for dissolved hydrocarbons specifically calculates oil components which are dissolved in water, which are known to be the primary source of toxicity exerted by oil.

7.2.3.1 Dissolved Hydrocarbons

Laboratory studies have shown that dissolved hydrocarbons exert most of the toxic effects of oil 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). Dissolved hydrocarbons are taken up by organisms directly from the water column by absorption through external surfaces and gills, as well as through the digestive tract. Thus, soluble hydrocarbons are termed “bioavailable”.

Hydrocarbon compounds vary in water-solubility and the toxicity exerted by individual compounds is inversely related to solubility, however bioavailability will be modified by the volatility of individual compounds (Nirmalakhandan & Speece, 1988; Blum & Speece, 1990; McCarty, 1986; McCarty et al., 1992a, 1992b; Mackay et al., 1992; McCarty & Mackay, 1993; Verhaar et al., 1992, 1999; Swartz et al., 1995; French-McCay, 2002; McGrath and Di Toro, 2009). Of the soluble compounds, the greatest contributor to toxicity for water-column and benthic organisms are the lower-molecular-weight aromatic compounds, which are both volatile and soluble in water. Although they are not the most water-soluble hydrocarbons within most oil types, the polynuclear aromatic hydrocarbons (PAHs) containing 2-3 aromatic ring structures typically exert the largest narcotic effects because they are semi-soluble and not highly volatile, so they persist in the environment long enough for significant accumulation to occur (Anderson et al., 1974, 1987; Neff & Anderson, 1981; Malins & Hodgins, 1981; McAuliffe, 1987; NRC, 2003). The monoaromatic hydrocarbons (MAHs), including the BTEX compounds (benzene, toluene, ethylbenzene, and xylenes), and the soluble alkanes (straight chain hydrocarbons) also contribute to toxicity, but these compounds are highly volatile, so that their contribution will be low when oil is exposed to evaporation and higher when oil is discharged at depth where volatilisation does not occur (French-McCay, 2002).

French-McCay (2002) reviewed available toxicity data, where marine biota was exposed to dissolved hydrocarbons prepared from oil mixtures, finding that 95% of species and life stages exhibited 50% population mortality (LC_{50}) between 6 and 400 ppb total PAH concentration after 96 hrs exposure, with an average of 50 ppb. Hence, concentrations lower than 6 ppb total PAH value should be protective of 97.5% of species and life stages even with exposure periods of days (at least 96 hours). Early life-history stages of fish appear to be more sensitive than older fish stages and invertebrates.

Exceedances of 10, 50 or 400 ppb over a 1 hour timestep (see Table 7.4) was applied to indicate increasing potential for sub-lethal to lethal toxic effects (or low to high), based on NOPSEMA (2019).

7.2.3.2 Entrained Hydrocarbons

Entrained hydrocarbons consist of oil droplets that are suspended in the water column and insoluble. 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).

The 10 ppb threshold represents the very lowest concentration and corresponds generally with the lowest trigger levels for chronic exposure for entrained hydrocarbons in the ANZECC & ARMCANZ (2000) water quality guidelines. Due to the requirement for relatively long exposure times (>24 hours) for these concentrations to be significant, they are likely to be more meaningful for juvenile fish, larvae and planktonic

organisms that might be entrained (or otherwise moving) within the entrained plumes, or when entrained hydrocarbons adhere to organisms or trapped against a shoreline for periods of several days or more.

This exposure zone is not considered to be of significant biological impact and is therefore outside the adverse exposure zone. This exposure zone represents the area contacted by the spill. This area does not define the area of influence as it is considered that the environment will not be affected by the entrained hydrocarbon at this level.

Thresholds of 10 ppb and 100 ppb were applied over a 1-hour time exposure (Table 7.4), to cover the range of thresholds outlined in ANZECC & ARMCANZ (2000) water quality guidelines, the incremental change for greater potential effect and is per NOPSEMA (2019).

A complicating factor that should be considered when assessing the consequence of dissolved and entrained oil distributions is that there will be some areas where both physically entrained oil droplets and dissolved hydrocarbons co-exist. Higher concentrations of each will tend to occur close to the source where sea conditions can force mixing of relatively unweathered oil into the water column, resulting in more rapid dissolution of soluble compounds.

Table 7.4 Dissolved and entrained hydrocarbon exposure values assessed over a 1-hour time step, as per NOPSEMA (2019).

	Exposure level	In-water threshold (ppb)	Description
Dissolved hydrocarbons	Low	10	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
	Moderate	50	Approximates potential toxic effects, particularly sublethal effects to sensitive species
	High	400	Approximates toxic effects including lethal effects to sensitive species
Entrained hydrocarbons	Low	10	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
	High	100	As appropriate given oil characteristics for informing risk evaluation

8 HYDROCARBON PROPERTIES

8.1 Physical Properties

An exploration well has been drilled within the Annie field with hydrocarbon properties being known for that location. Annie condensate has a higher residuals profile when compared with other offset fields representing a more conservative analogue and therefore Annie condensate was selected for all scenarios modelled in this assessment. While a comprehensive oil assay for Annie-1 condensate was provided by the client (Core Lab RFL 201903231), it should be noted that essential data pertaining to the pour point, dynamic viscosity, and aromatic content for distinct boiling point ranges were absent from the dataset. Consequently, a pragmatic approach was adopted to supplement these missing values by sourcing relevant information from the Minerva condensate assay data. Minerva condensate is found in a nearby reservoir.

Table 8.1 and Table 8.2 present the physical properties and boiling point ranges of the condensate used in this study.

The Annie-1 condensate has an API of 41.0, density of 820.0 kg/m^3 (at 16 ºC), with low viscosity (1.063 cP at 20 ºC) classifying it as a Group II (light-persistent) oil according to the International Tankers Owners Pollution Federation (ITOPF, 2020) and US EPA/USCG classifications. The condensate comprises a significant portion of volatiles and semi- to low-volatiles (82.5% total) with 17.5% residual components. This means the condensate will evaporate readily when on the water surface, with the persistent components to remain on the water surface over time.

The boiling points (BP) are dictated by the length of the carbon chains, with the longer and more complex compounds having a higher boiling point, and therefore lower volatility and evaporation rate. Typical evaporation times once the hydrocarbons reach the surface and are exposed to the atmosphere are:

- Up to 12 hours for the C_4 to C_{10} compounds (BP <180°C).
- Up to 24 hours for the C_{11} to C_{15} compounds (BP 180-265°C).
- Several days for the C_{16} to C_{20} compounds (BP 265-380°C).
- Not applicable for the residual compounds (BP >380°C), which will resist evaporation, persist in the marine environment for longer periods, and be subject to relatively slow degradation.

Table 8.1 Physical properties.

Characteristic	Annie-1 Condensate
Density (kg/m^3)	820.0 (@ 16 °C)
API	41.0
Dynamic viscosity (cP)	1.063 (@ 20°C)*
Pour point (°C)	-30*
Wax Content (%)	10.0
Hydrocarbon property category	Group II
Hydrocarbon property classification	Light-Persistent

Table 8.2 Boiling point ranges.

Oil Type	Component	Volatile (%)	Semi-volatile (%)	Low-volatility (%)	Residual (%)
	Boiling point (°C)	<180 C_4 to C_{10}	180-265 C_{11} to C_{15}	265-380 C_{16} to C_{20}	>380 >C_{20}
Annie-1 condensate	% of total	8.0	46.5	28.0	17.5

** data extracted from Minerva condensate assay*

8.2 Weathering Properties

8.2.1 Annie-1 Condensate

A series of model weathering tests were conducted to illustrate the potential behaviour of the condensate when exposed to idealised and representative environmental conditions:

- A 50 m^3 surface release over 1-hour under calm wind conditions (constant 5 knots), assuming low seasonal water temperature (15 °C) and ambient tidal and drift currents; and
- A 50 m^3 surface release over 1-hour under variable wind conditions (1-23 knots, drawn from representative data files), assuming low seasonal water temperature (15°C) and ambient tidal and drift currents.

Note, a surface release is used in the weathering test to solely focus on the weathering and fates of the hydrocarbons when exposed to atmospheric conditions.

The first case is indicative conditions that would not generate entrainment, while the second case represents conditions that would likely cause entrainment. Both scenarios provide examples of potential behaviour during a spill once the oil is on the sea surface.

The mass balance for the condensate under the constant 5 knot wind case (Figure 8.1) shows that 52.4% of the condensate is expected to evaporate within 24 hours. Under calm conditions, the majority of the remaining condensate on the water surface will weather at a slower rate due to being comprised of the less volatile, longer-chain compounds. Evaporation shall cease when only the residual compounds remain, and they will be subject to more gradual decay through biological and photochemical processes.

Under the variable-wind case (Figure 8.2), where the winds are of greater strength on average, entrainment of condensate into the water column is shown to increase. Approximately 24 hours after the spill, 70.1% of the mass is shown to have entrained and a further 23.8% has evaporated, leaving only a small proportion floating on the water surface (<1%).

The increased level of entrainment in the variable-wind case result in a higher percentage decaying at an approximate rate of ~2.5% per day with 17.8% after 7 days, compared to <0.7% per day and a total of 0.1% after 7 days for the constant-wind case. Given the proportion of entrained condensate and the tendency for it to remain mixed in the water column, the remaining hydrocarbons will decay over time scales of several weeks.

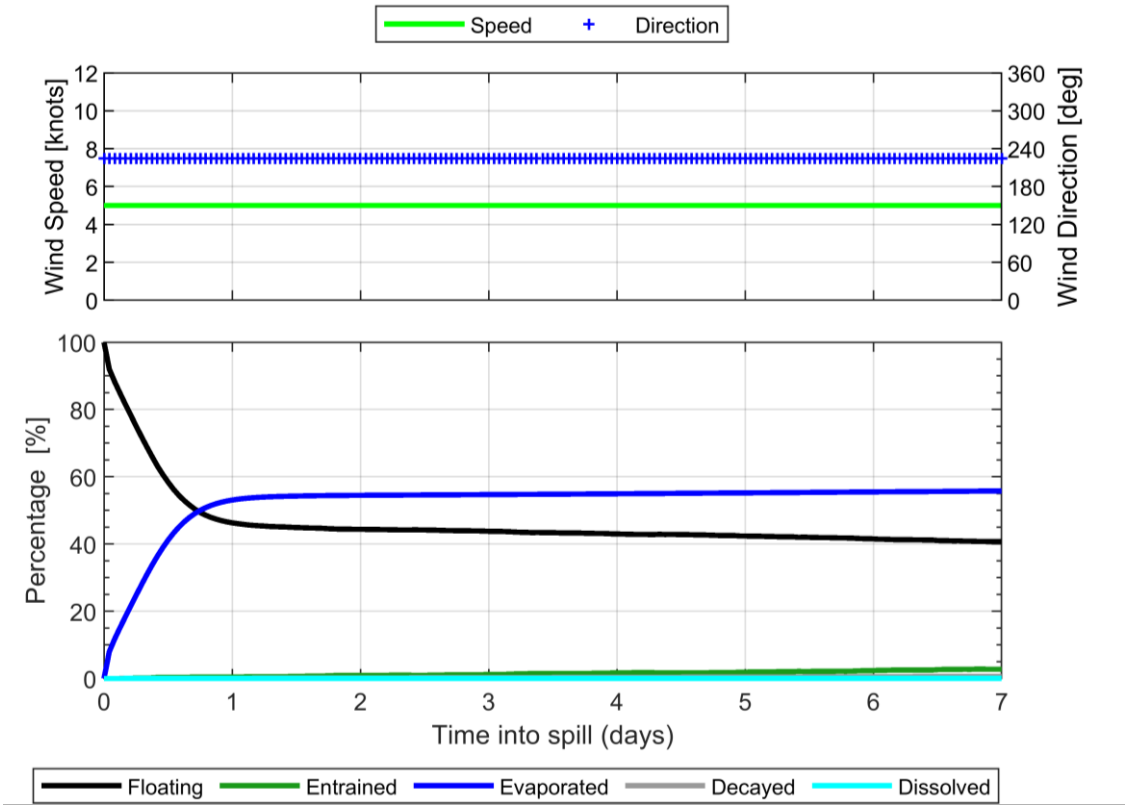

Figure 8.1 Proportional mass balance plot representing the weathering of Annie-1 condensate spilled onto the water surface over 1-hour and subject to a constant 5 knots wind speed at 15°C water temperature.

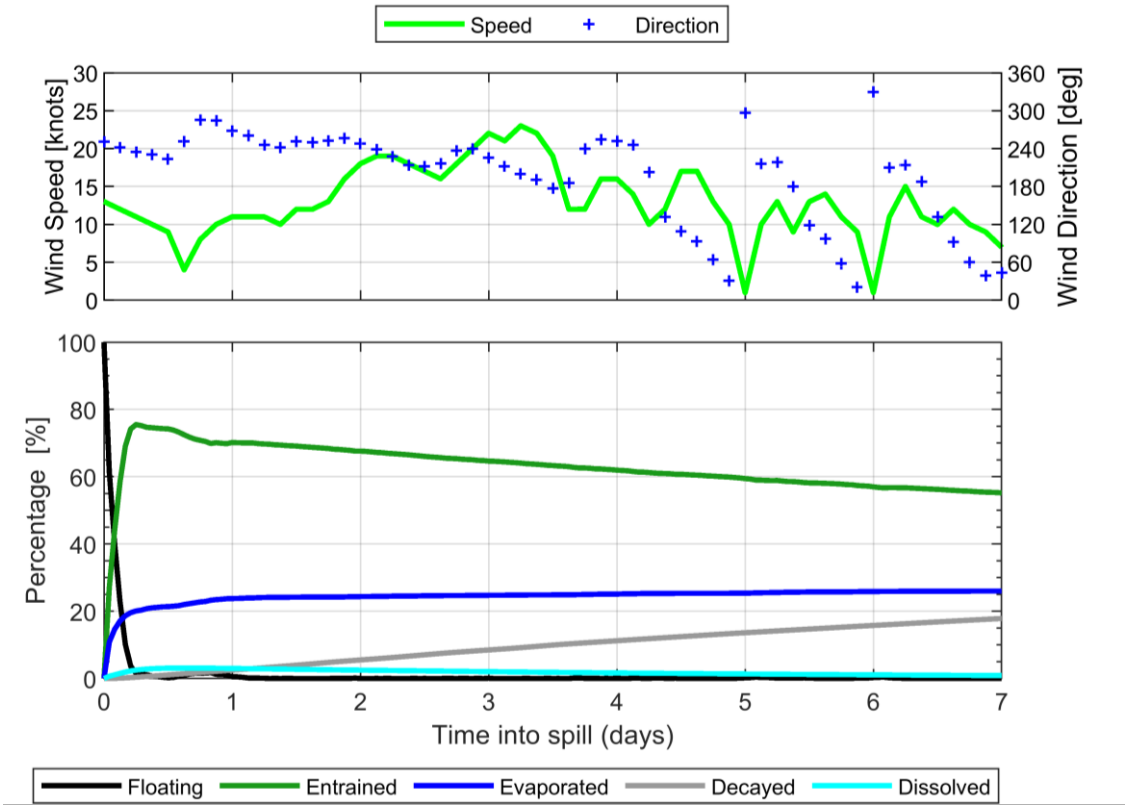

Figure 8.2 Proportional mass balance plot representing the weathering of Annie-1 condensate spilled onto the water over 1-hour and subject to variable wind speeds (1-23 knots) at 15°C water temperature.

9 MODEL SETTINGS

Table 9.1 provides a summary of the oil spill model settings.

Table 9.1 Summary of the oil spill model settings and thresholds used in this assessment.

Parameter	Scenario 1	Scenario 2	Scenario 3
Description	Loss of Well Control at Elanora-1 ST1 (Isabella)	Loss of Well Control at Pecten East-2	Loss of Well Control at Annie-2
Number of randomly selected spill start times	100 per season (200 per scenario)		
Model period	Summer (November to April) Winter (May to October)		
Hydrocarbon type for oil spill modelling only	Annie-1 condensate		
Spill volume	105,289 bbl (16,740 m^3)	83,273 bbl (13,239 m^3)	66,430 bbl (10,562 m^3)
Release type (subsurface, top of BOP stack (depth (m))	54	34	36
Release duration (days)*	102	102	104
Simulation length (days)	116		118
Surface oil concentration thresholds (g/m^2) ^	1 (low); 10 (moderate); 50 (high)		
Shoreline oil accumulation thresholds (g/m^2) ^	10 (low); 100 (moderate); 1,000 (high)		
Dissolved hydrocarbon concentrations (ppb) ^	10 (low); 50 (moderate); 400 (high)		
Entrained hydrocarbon concentrations (ppb) ^	10 (low); 100 (high)		

^Thresholds based on NOPSEMA (2019)

* Note, the 104-day model duration for Scenario 3 relates to slightly more conservative response time for the relief well to kill Annie-2. This duration was carried over from the specifications of the original Annie-2 modelling.

10 PRESENTATION AND INTERPRETATION OF MODEL RESULTS

The results from the modelling study are presented in a number of tables and figures, which aim to provide an understanding of potential sea-surface and water column exposure and shoreline accumulation.

10.1 Annual Analysis

The statistics are based on the following principles:

- The ***greatest distance travelled by a spill trajectory*** – is determined by a) recording the maximum and b) second greatest distance travelled (or 99th percentile) by a single trajectory, within a scenario, from the release location to the identified exposure thresholds;
- The ***probability of oil exposure to a receptor*** – is determined by recording the number of spill trajectories to reach a specified sea surface or subsea threshold within a receptor polygon, divided by the total number of spill trajectories within that scenario;
- The ***minimum time before oil exposure to a receptor*** – is determined by ranking the elapsed time before sea surface exposure, at a specified threshold, to grid cells within a receptor polygon and recording the minimum value;
- The ***maximum residence time for oil exposure within a receptor*** – is determined by recording the longest continuous length of time a grid cell is exposed to either floating, entrained or dissolved hydrocarbon above each threshold, within a receptor;
- The ***probability of oil accumulation at a receptor*** – is determined by recording the number of spill trajectories to reach a specified shoreline accumulation threshold within a receptor polygon, divided by the total number of spill trajectories within that scenario;
- The ***maximum (total) volume of oil ashore*** – is the total volume of oil stranded on the shorelines throughout the duration of the simulation;
- The ***maximum potential oil loading within a receptor*** – is determined by identifying the maximum loading to any grid cell within a receptor polygon, for a scenario; and
- The ***dissolved and entrained hydrocarbon exposure*** – is determined by recording the maximum instantaneous concentrations at each grid cell.

10.2 Deterministic Trajectories

The stochastic modelling results were assessed for each scenario, and the deterministic runs were identified and are presented in the result section based on the following criteria.

a. Largest swept area for surface oil above 10 g/m^2;

b. Largest (total) volume of oil ashore;

c. Longest length of shoreline with oil accumulation above 100 g/m^2;

d. Largest area of entrained hydrocarbon exposure above 100 ppb; and

e. Largest area of dissolved hydrocarbon exposure above 50 ppb.

10.3 Receptors Assessed

A range of environmental receptors and shorelines were assessed for floating oil exposure, shoreline accumulation and water column exposure as part of the study (see Figure 10.1 to Figure 10.11). Receptor categories (see Table 10.1) include sections of shorelines which are defined by local government areas (LGAs), sub-LGAs and offshore islands. All other sensitive receptors other than submerged reefs, shoals and banks (RSB) were sourced from Australian Government Department of Climate Change, Energy, the Environment and Water (https://www.dcceew.gov.au/).

Risks of exposure were separately calculated for each sensitive receptor area and have been tabulated.

Table 10.2 summarises the receptors that the release locations reside within.

RPS have utilised BIAs for the southern right whale that were delineated within the 2011-2021 Conservation Management Plan for the Southern Right Whale. The NCV Atlas now includes updated BIAs for SRW, though the recently drafted National Recovery Plan for the southern right whale has not been published. The updated BIAs have not been used in this report.

Table 10.1 Summary of receptors used to assess floating oil, shoreline and in-water exposure to hydrocarbons.

Receptor Category	Acronym	Hydrocarbon Exposure Assessment			Figure reference
		Water Column	Floating oil	Shoreline	
Australian Marine Park	AMP	✓	✓	×	Figure 10.1
Integrated Marine and Coastal Regionalisation Areas	IMCRA	✓	✓	×	Figure 10.2
Marine National Park	MNP	✓	✓	×	Figure 10.3
Marine Park	MP	✓	✓	×	Figure 10.4
Nature Reserve	NR	✓	✓	×	Figure 10.5
Ramsar	Ramsar	✓	✓	✓	Figure 10.6
Reefs, Shoals and Banks	RSB	✓	✓	×	Figure 10.7
Key Ecological Feature	KEF	✓	✓	×	Figure 10.8
State Waters	State Waters	✓	✓	×	n/a
Local and Sub-Local Government Area	LGA and Sub-LGA	✓ (Reported as: Nearshore Waters)	✓ (Reported as: Nearshore Waters)	✓ (Reported as: Shore)	Figure 10.9 to Figure 10.11

Table 10.2 Summary of the receptors that the release locations reside within for each scenario.

Acronym	Receptor Name	Scenario		
		Scenario 1	Scenario 2	Scenario 3
BIA	Antipodean Albatross - Foraging	✓	✓	✓
	Black-browed Albatross - Foraging	✓	✓	✓
	Bullers Albatross - Foraging	✓	✓	✓
	Campbell Albatross - Foraging	✓	✓	✓
	Common Diving-petrel - Foraging	✓	✓	✓
	Indian Yellow-nosed Albatross - Foraging	✓	✓	✓
	Pygmy Blue Whale - Distribution	✓	✓	✓
	Pygmy Blue Whale - Foraging	✓	✓	✓
	Pygmy Blue Whale - Foraging annual high use area	✓	✓	✓
	Shy Albatross - Foraging	✓	✓	✓
	Southern Right Whale - Aggregation	×	✓	×
	Southern Right Whale - Known Core Range	✓	✓	✓
	Wandering Albatross - Foraging	✓	✓	✓
	Wedge-tailed Shearwater - Foraging	✓	✓	✓
	White Shark - Distribution	✓	✓	✓
IMCRA	Otway	✓	✓	✓

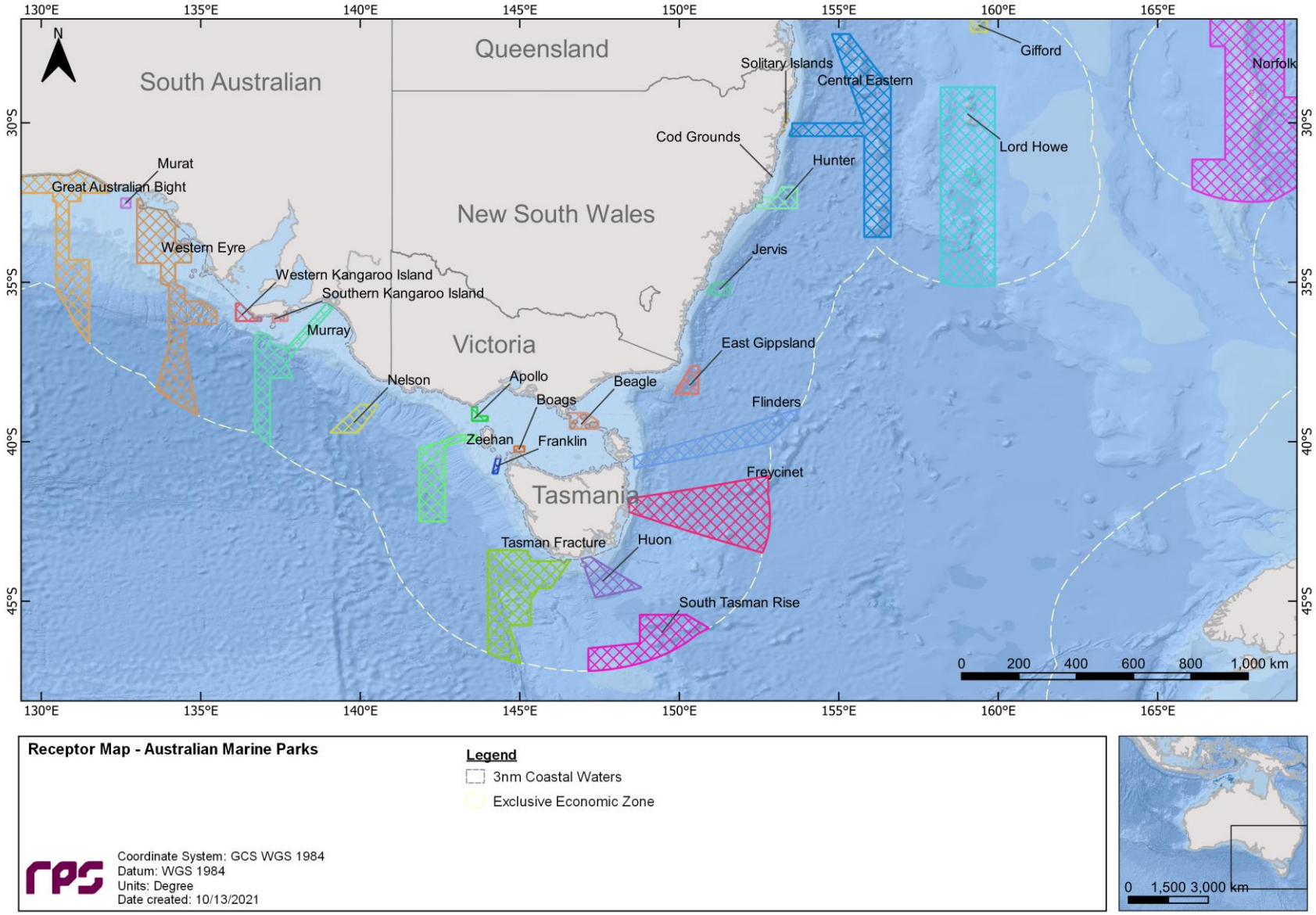

Figure 10.1 Receptor map for Australian Marine Parks (AMP).

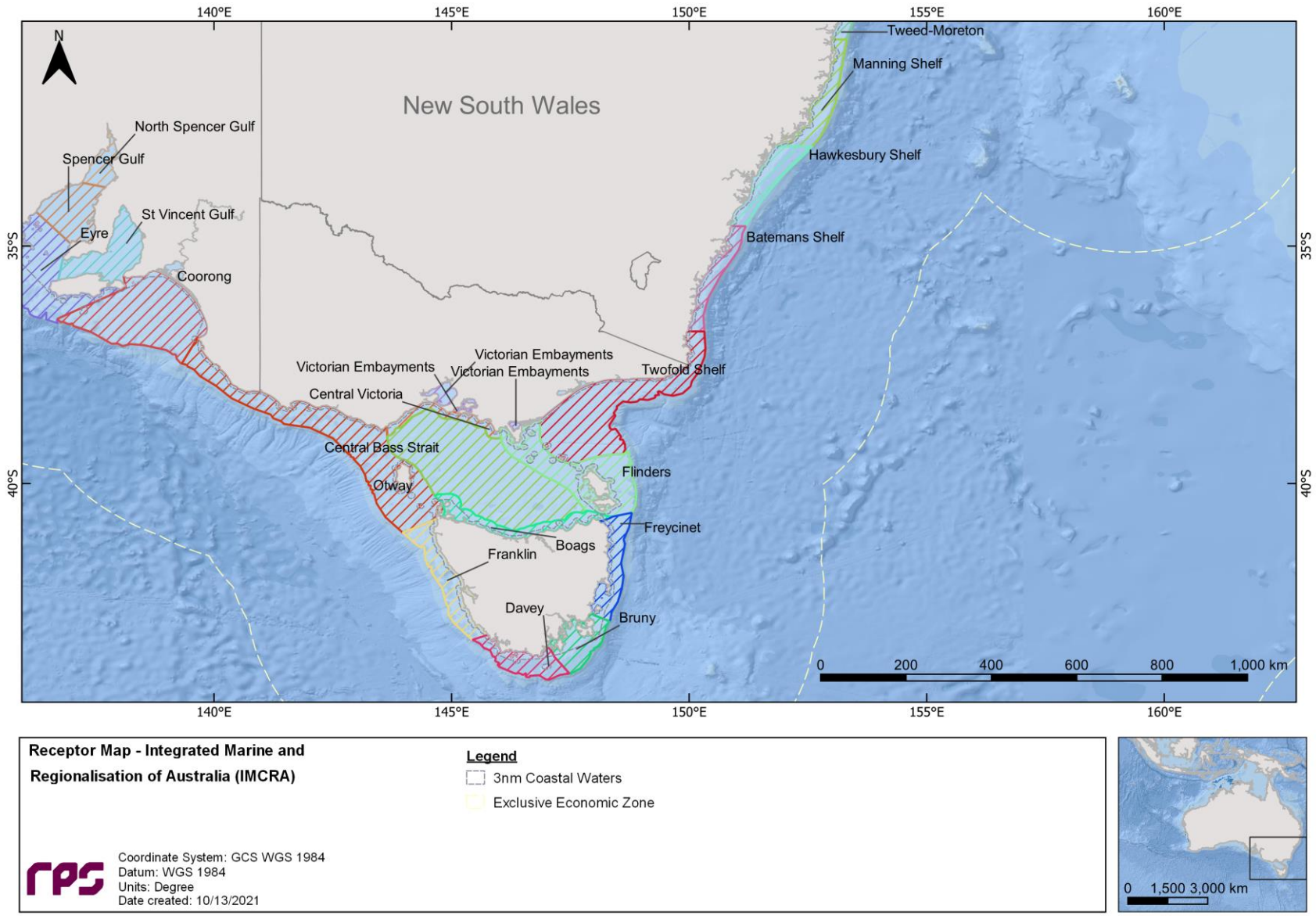

Figure 10.2 Receptor map for integrated marine and coastal regionalisation (IMCRA) areas.

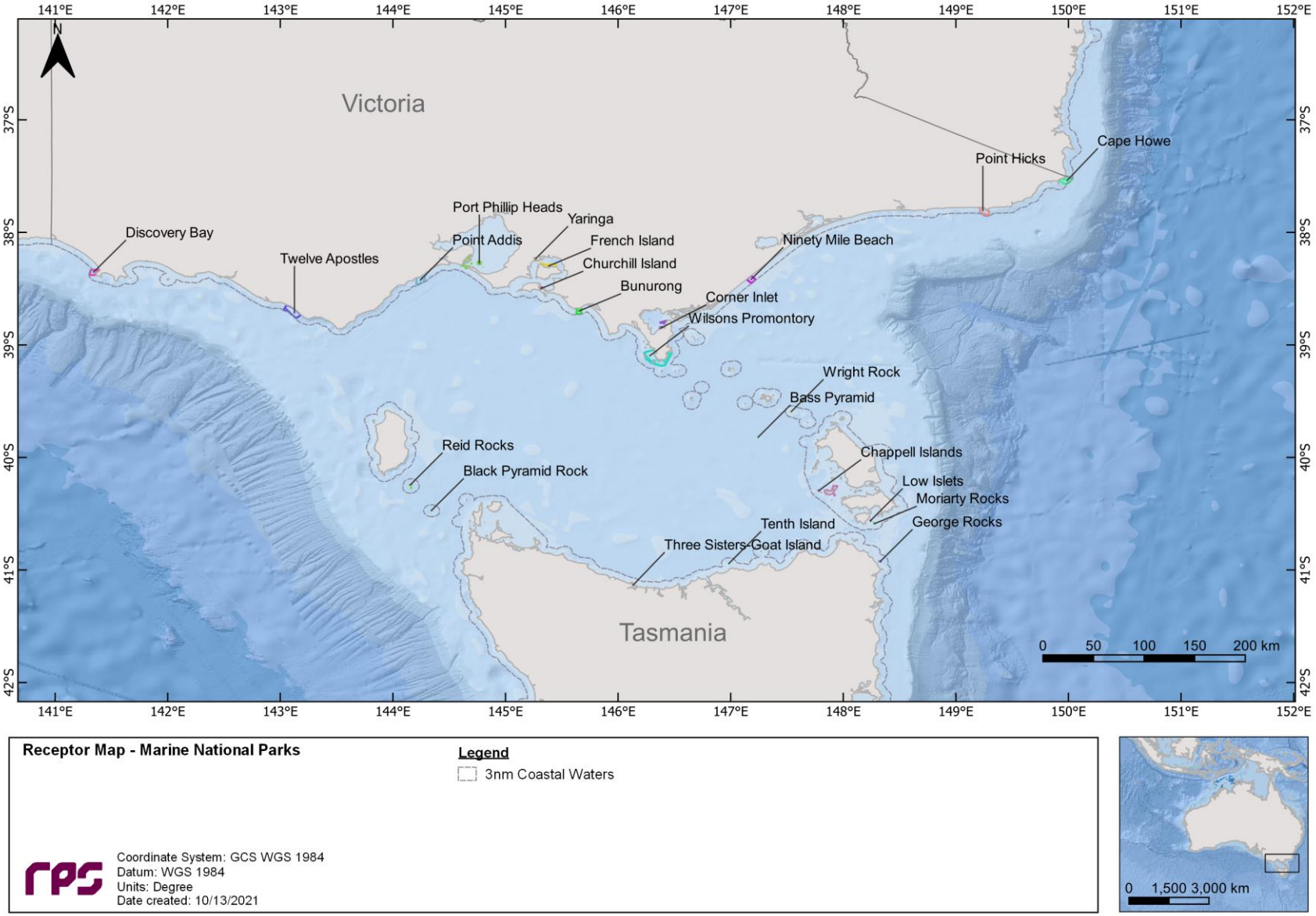

Figure 10.3 Receptor map for Marine National Parks (MNP).

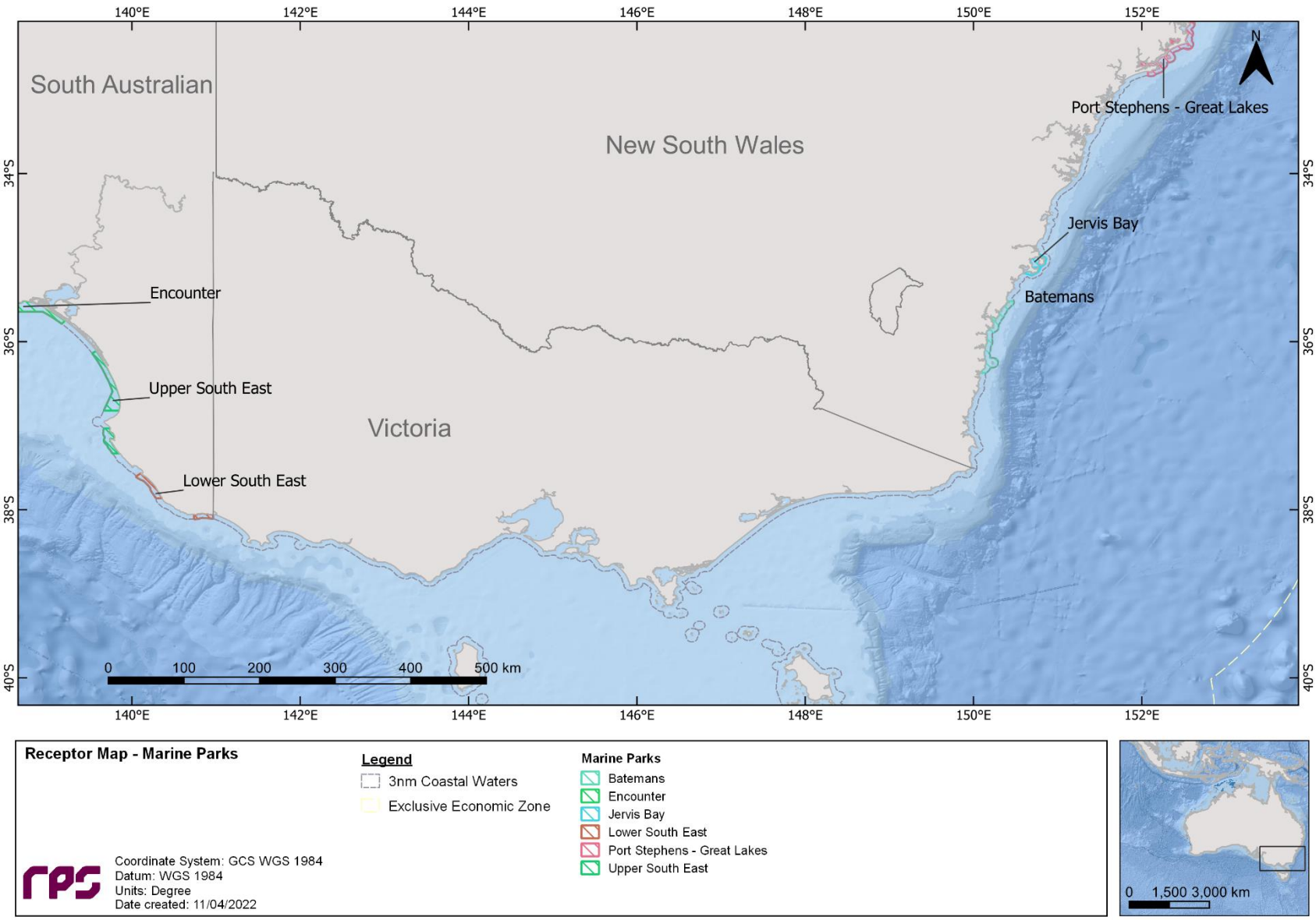

Figure 10.4 Receptor map for Marine Parks (MP).

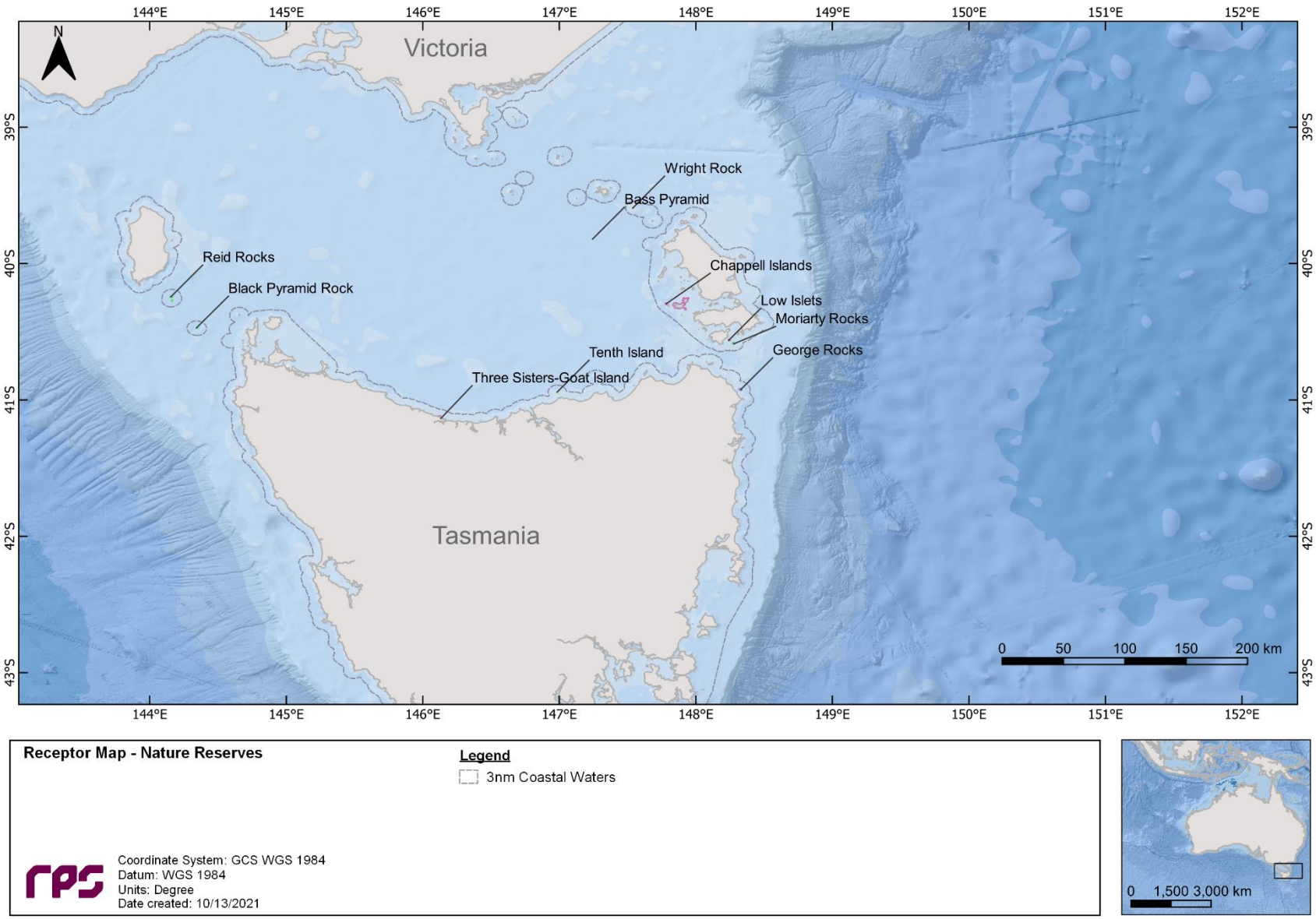

Figure 10.5 Receptor map for Nature Reserves (NR).

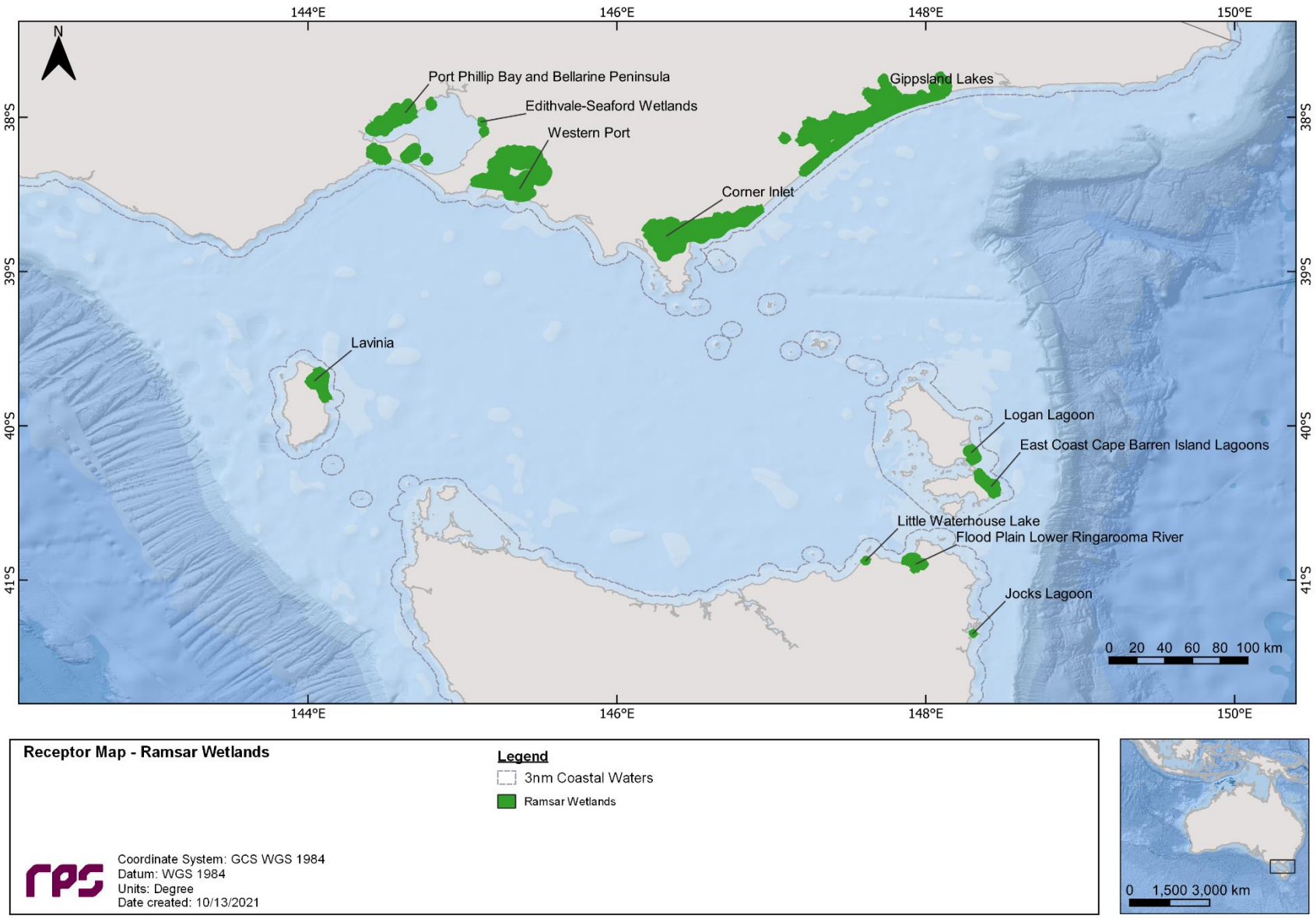

Figure 10.6 Receptor map for Ramsar Sites (Ramsar).

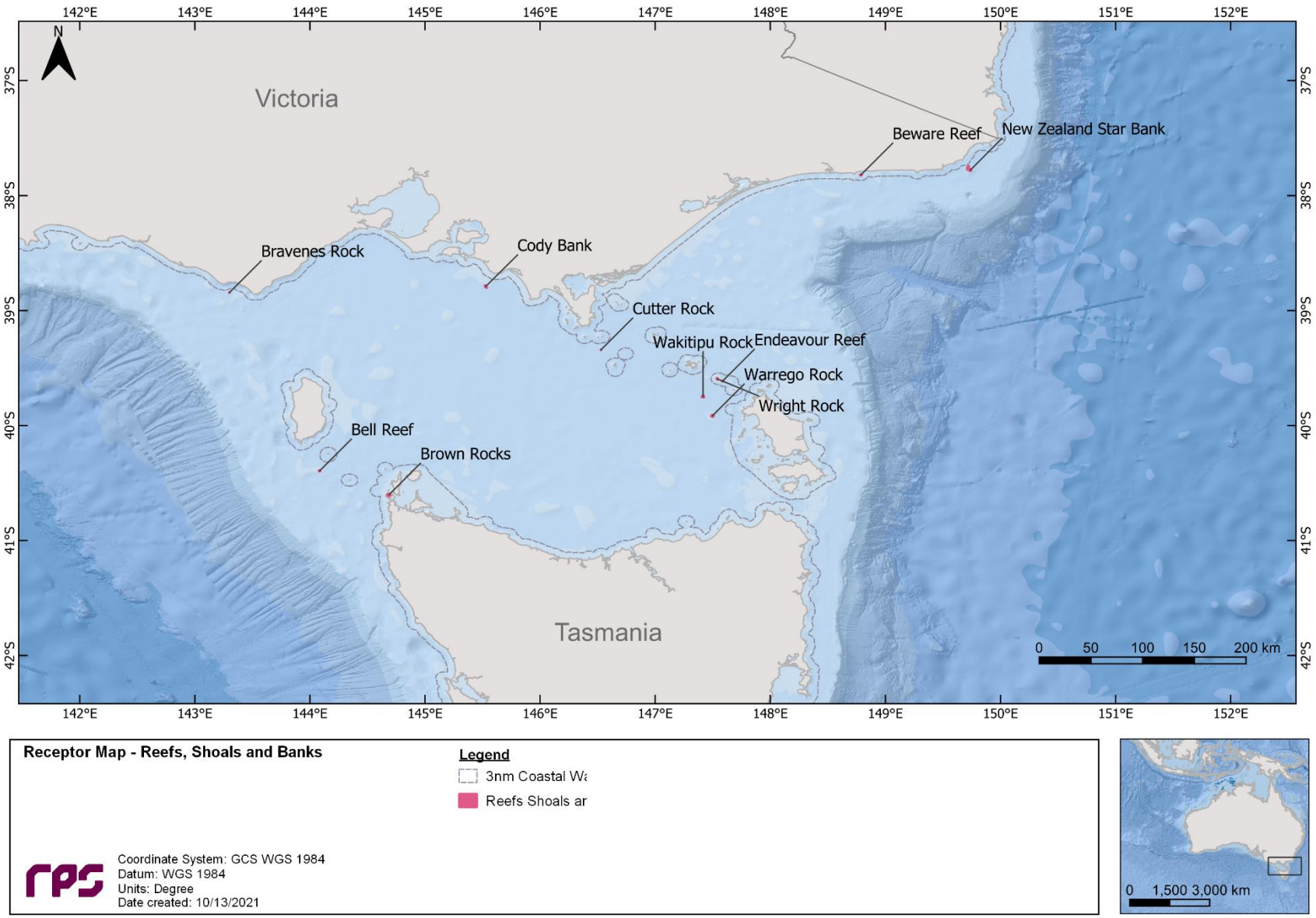

Figure 10.7 Receptor map for Reefs, Shoals and Banks (RSB).

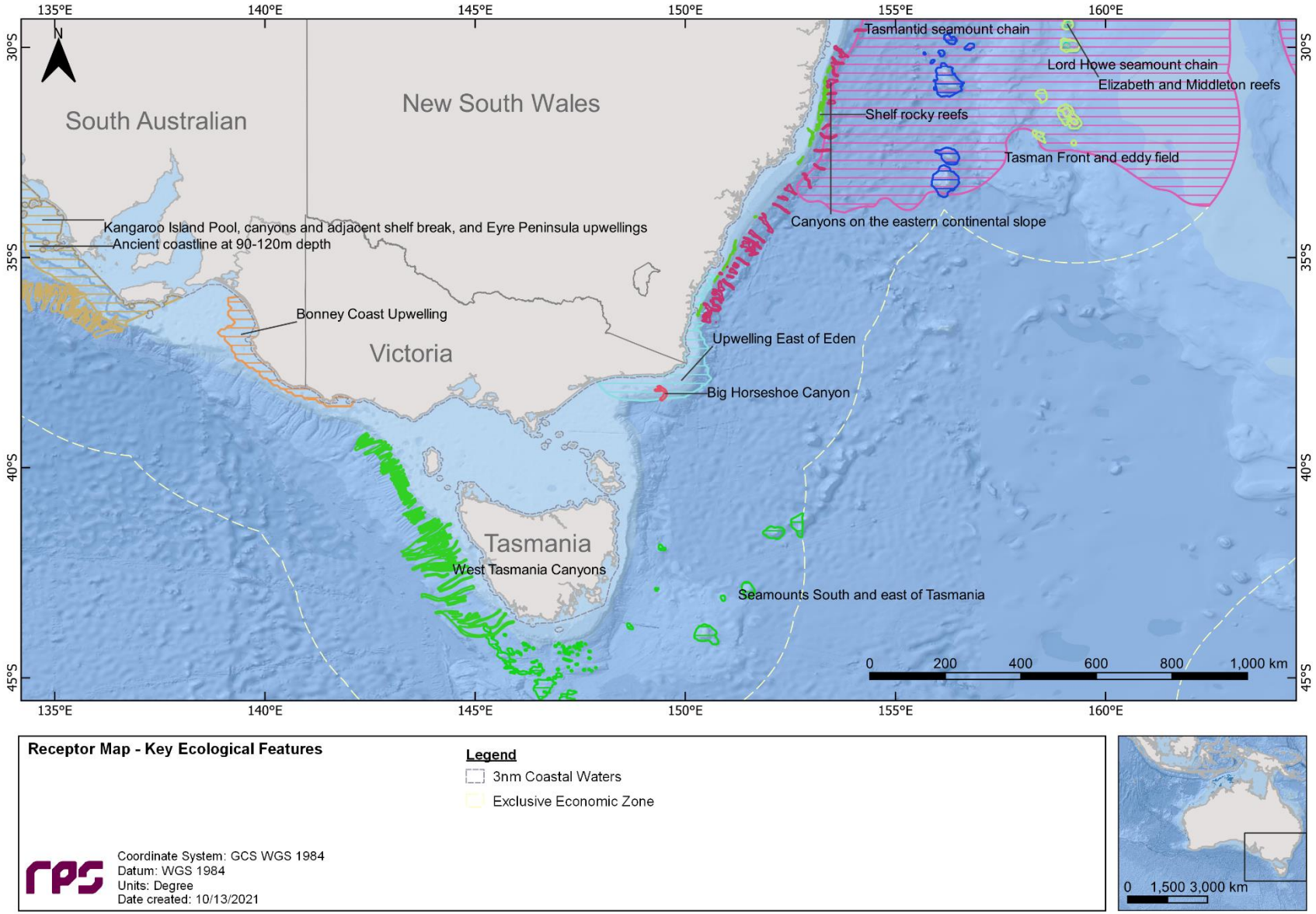

Figure 10.8 Receptor map for Key Ecological Features (KEF).

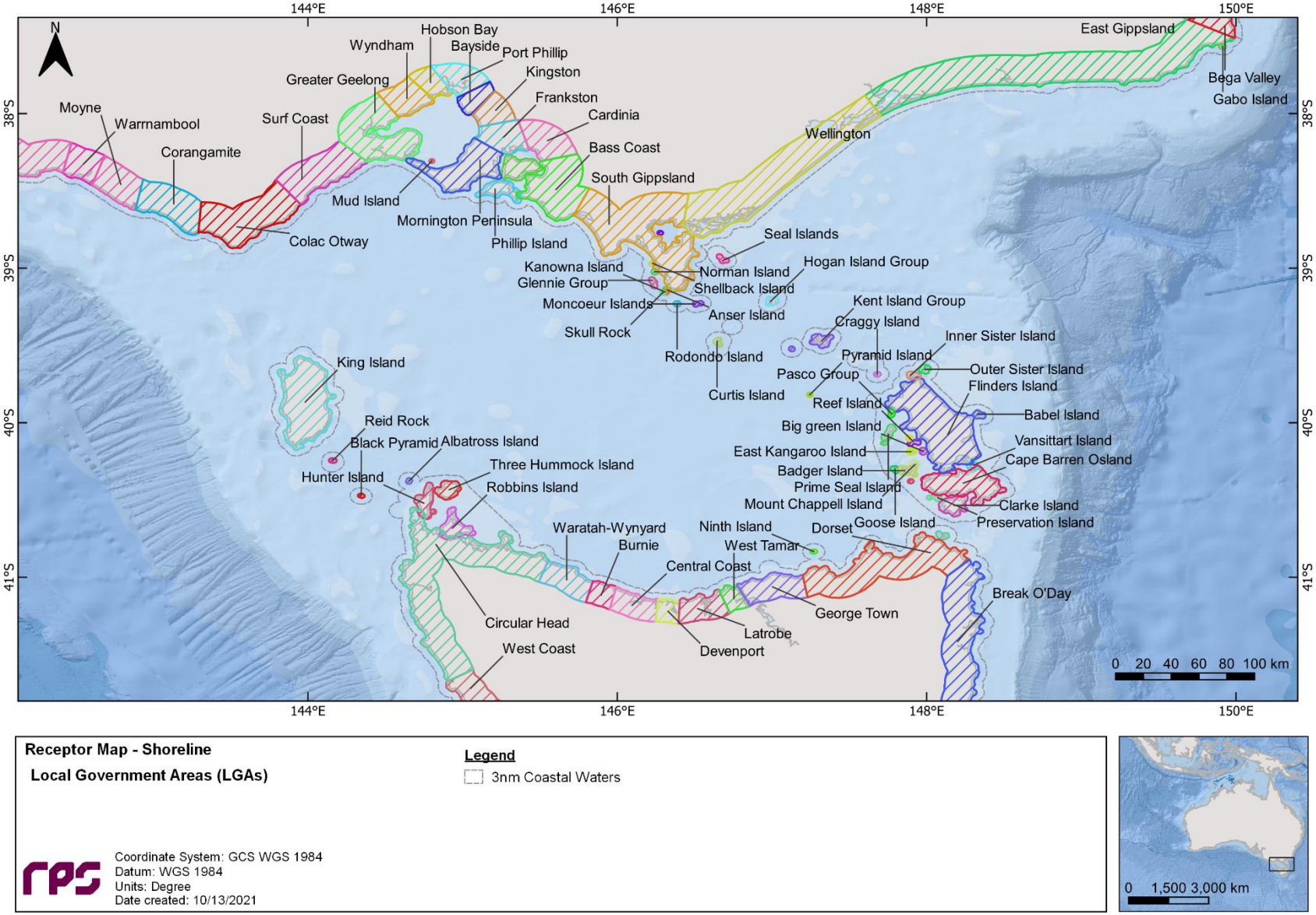

Figure 10.9 Receptor map for shorelines (1 of 3).

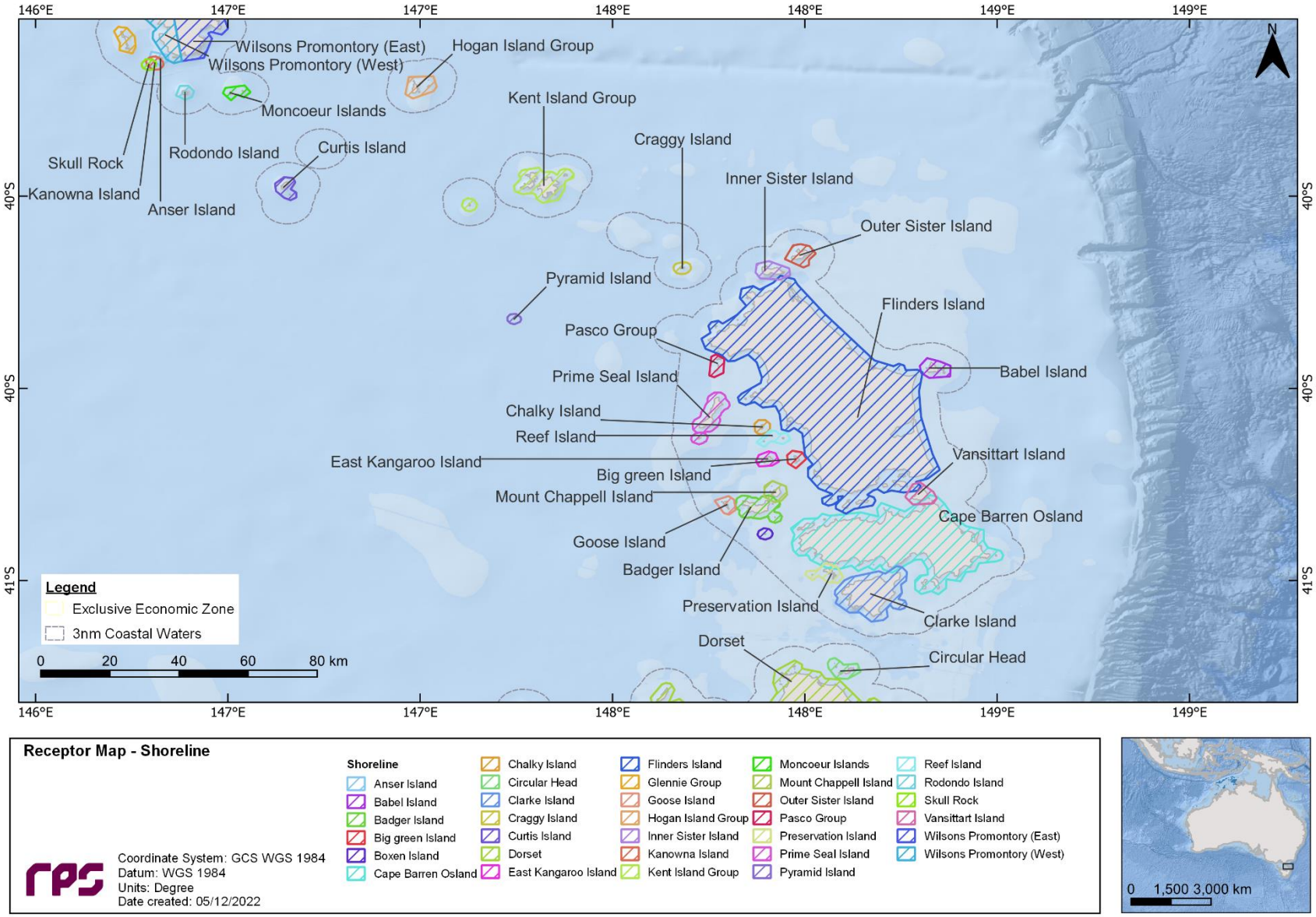

Figure 10.10 Receptor map for shorelines (2 of 3).

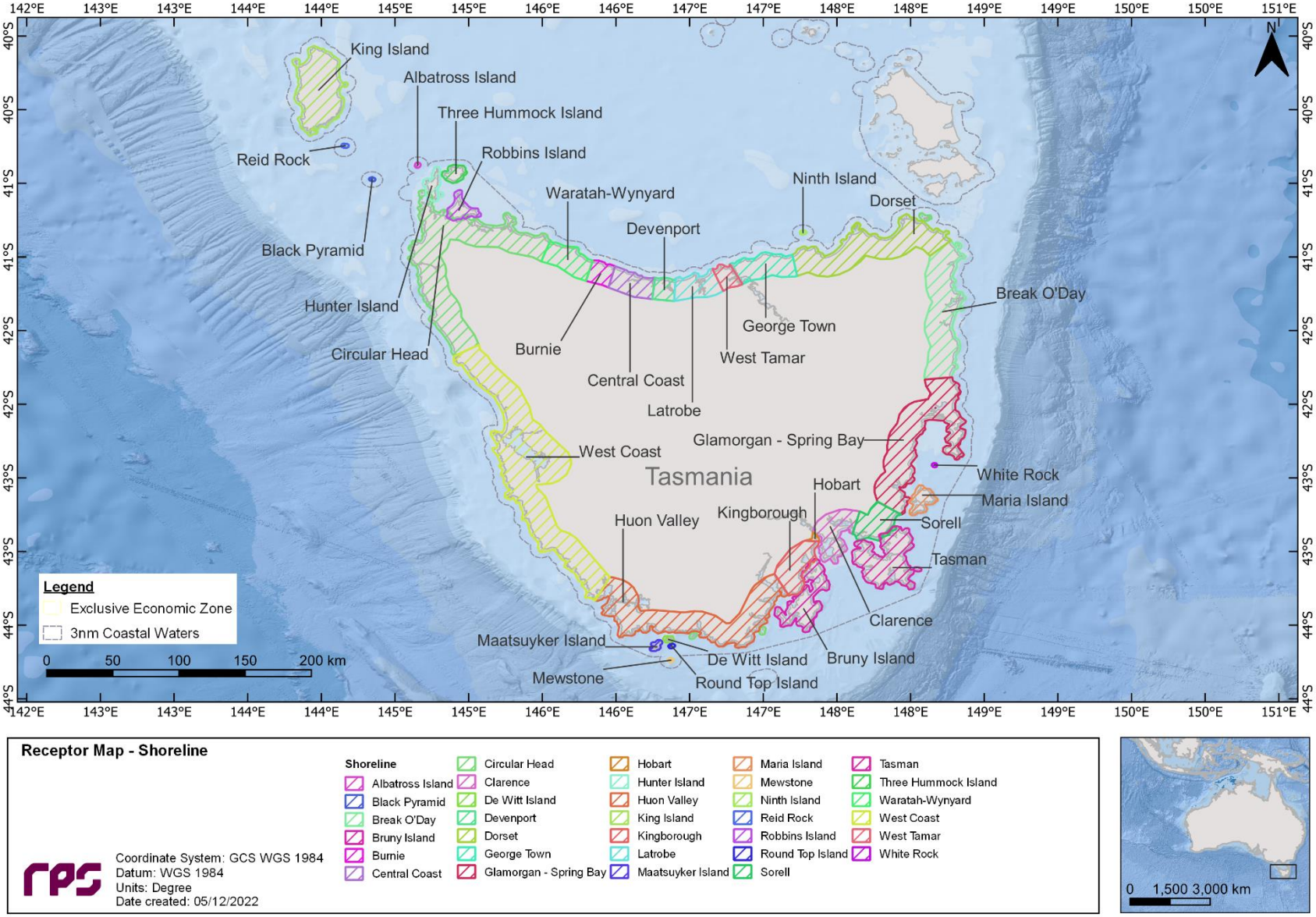

Figure 10.11 Receptor map for shorelines (3 of 3).

11 RESULTS – SCENARIO 1 – 105,289 BBL (16,740 M^3) SUBSURFACE RELEASE FROM A LOSS OF WELL CONTROL AT ELANORA-1 ST1

This scenario examined a 105,289 bbl (16,740 m^3) subsurface release of condensate over 102 days to represent a LOWC scenario at Elanora-1 ST1 well. A total of 100 spill simulations were run per season (summer and winter) and each simulation was tracked for 116 days. The results are presented on a seasonal basis.

Sections 11.1 and 11.2 present the seasonal stochastic analysis and deterministic analysis results, respectively.

11.1 Stochastic Analysis

11.1.1 Floating Oil Exposure

Table 11.1 summarises the maximum distance travelled by floating oil on the sea surface at each threshold. The maximum distance and corresponding direction from the release location to the low (1–10 g/m^2) and moderate (10–50 g/m^2) exposure zones was 75.7 km (east, winter) and 11.7 km (east-southeast, summer), respectively. No high (>50 g/m^2) exposure zones were predicted during either summer or winter conditions.

Table 11.2 summarises the potential floating oil exposure to individual receptors.

During summer, a total of 16 Biologically Important Areas (BIAs) were predicted to be exposed to floating oil at, or above, the low threshold. Excluding the BIAs that the release location resides within (see Section 10.3), the highest probability (40%) of low exposure was predicted at the Southern Right Whale – Aggregation BIA. The minimum time before low exposure to the Southern Right Whale – Aggregation BIA was 3.21 days.

Contrastingly, during winter, excluding the BIAs that the release location resides within (see Section 10.3), the highest probability (54%) of low exposure for any BIA was revealed at the Short-tailed Shearwater - Foraging BIA. Additionally, the minimum time before low exposure to the Southern Right Whale – Aggregation was 1.38 days.

Table 11.3 presents the maximum residence time of floating oil exposure for each individual grid cell within each individual receptor.

Figure 11.1 and Figure 11.2 present the zones of potential floating oil exposure per season whilst Figure 11.3 to Figure 11.6 present the maximum residence time of floating oil exposure for the NOPSEMA thresholds.

Table 11.1 Maximum distance and direction from the release location to the edge of floating oil exposure. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations per season.

Distance and direction travelled	Zones of potential floating oil exposure					
	Summer			Winter		
	Low	Moderate	High	Low	Moderate	High
Maximum distance (km) from release location	74.0	11.7	-	75.7	9.8	-
Maximum distance (km) from release location (99th percentile)	48.0	11.3	-	68.4	9.3	-
Direction	E	ESE	-	E	NW	-

Table 11.2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer						Winter					
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)		
		Low	Mod.	High	Low	Mod.	High	Low	Mod.	High	Low	Mod.	High
BIA	Antipodean Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Black-browed Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Bullers Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Campbell Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Common Diving-petrel - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Indian Yellow-nosed Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Pygmy Blue Whale - Distribution*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Pygmy Blue Whale - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Pygmy Blue Whale - Foraging annual high use area*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Short-tailed Shearwater - Foraging	21	-	-	4.54	-	-	54	-	-	6.71	-	-
	Shy Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Southern Right Whale – Aggregation	40	-	-	3.21	-	-	47	-	-	1.38	-	-
	Southern Right Whale - Known Core Range*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Wandering Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Wedge-tailed Shearwater - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	White Shark - Distribution*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
IBRA	Otway Plain	21	-	-	4.54	-	-	53	-	-	6.71	-	-
	Otway Ranges	1	-	-	25.21	-	-	8	-	-	12.25	-	-
	Warrnambool Plain	12	-	-	7.75	-	-	16	-	-	6.92	-	-
IMCRA	Otway*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
MNP	Twelve Apostles	8	-	-	32.92	-	-	8	-	-	6.92	-	-

Receptor		Summer						Winter					
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)		
		Low	Mod.	High	Low	Mod.	High	Low	Mod.	High	Low	Mod.	High
Nearshore Waters	Colac Otway	21	-	-	4.54	-	-	54	-	-	6.71	-	-
	Corangamite	12	-	-	7.75	-	-	16	-	-	6.92	-	-
	Moyne	-	-	-	-	-	-	3	-	-	11.13	-	-
	Warrnambool	-	-	-	-	-	-	1	-	-	12.25	-	-
State Waters	Victoria State Waters*	30	-	-	4.54	-	-	56	-	-	6.71	-	-
Nearshore Waters (Sub-LGA)	Bay of Islands	-	-	-	-	-	-	3	-	-	11.13	-	-
	Cape Otway West	21	-	-	4.54	-	-	54	-	-	6.71	-	-
	Childers Cove	-	-	-	-	-	-	1	-	-	12.25	-	-
	Moonlight Head	8	-	-	27.92	-	-	11	-	-	6.92	-	-
	Port Campbell	4	-	-	7.75	-	-	7	-	-	11.17	-	-

*The release location resides within the receptor boundaries.

Table 11.3 Summary of the maximum residence time of floating oil exposure for each individual grid cell within each individual receptor. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer			Winter		
		Maximum residence time of floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross - Foraging*	16.21	1.21	-	17.29	1.21	-
	Black-browed Albatross - Foraging*	16.21	1.21	-	17.29	1.21	-
	Bullers Albatross - Foraging*	16.21	1.21	-	17.29	1.21	-
	Campbell Albatross - Foraging*	16.21	1.21	-	17.29	1.21	-
	Common Diving-petrel - Foraging*	16.21	1.21	-	17.29	1.21	-
	Indian Yellow-nosed Albatross - Foraging*	16.21	1.21	-	17.29	1.21	-
	Pygmy Blue Whale - Distribution*	16.21	1.21	-	17.29	1.21	-
	Pygmy Blue Whale - Foraging*	16.21	1.21	-	17.29	1.21	-
	Pygmy Blue Whale - Foraging annual high use area*	16.21	1.21	-	17.29	1.21	-
	Short-tailed Shearwater - Foraging	0.58	-	-	0.83	-	-
	Shy Albatross - Foraging*	16.21	1.21	-	17.29	1.21	-
	Southern Right Whale – Aggregation	0.54	-	-	0.71	-	-
	Southern Right Whale - Known Core Range*	16.21	1.21	-	17.29	1.21	-
	Wandering Albatross - Foraging*	16.21	1.21	-	17.29	1.21	-
	Wedge-tailed Shearwater - Foraging*	16.21	1.21	-	17.29	1.21	-
	White Shark - Distribution*	16.21	1.21	-	17.29	1.21	-
IBRA	Otway Plain	0.58	-	-	0.83	-	-
	Otway Ranges	0.13	-	-	0.21	-	-
	Warrnambool Plain	0.46	-	-	0.63	-	-
IMCRA	Otway*	16.21	1.21	-	17.29	1.21	-
MNP	Twelve Apostles	0.25	-	-	0.5	-	-
Nearshore Waters	Colac Otway	0.58	-	-	0.83	-	-
	Corangamite	0.46	-	-	0.63	-	-
	Moyne	-	-	-	0.46	-	-

Receptor		Summer			Winter		
		Maximum residence time of floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High
	Warrnambool	-	-	-	0.04	-	-
State Waters	Victoria State Waters*	0.58	-	-	0.83	-	-
Nearshore Waters (Sub-LGA)	Bay of Islands	-	-	-	0.46	-	-
	Cape Otway West	0.58	-	-	0.83	-	-
	Childers Cove	-	-	-	0.04	-	-
	Moonlight Head	0.21	-	-	0.5	-	-
	Port Campbell	0.46	-	-	0.63	-	-

*The release location resides within the receptor boundaries.

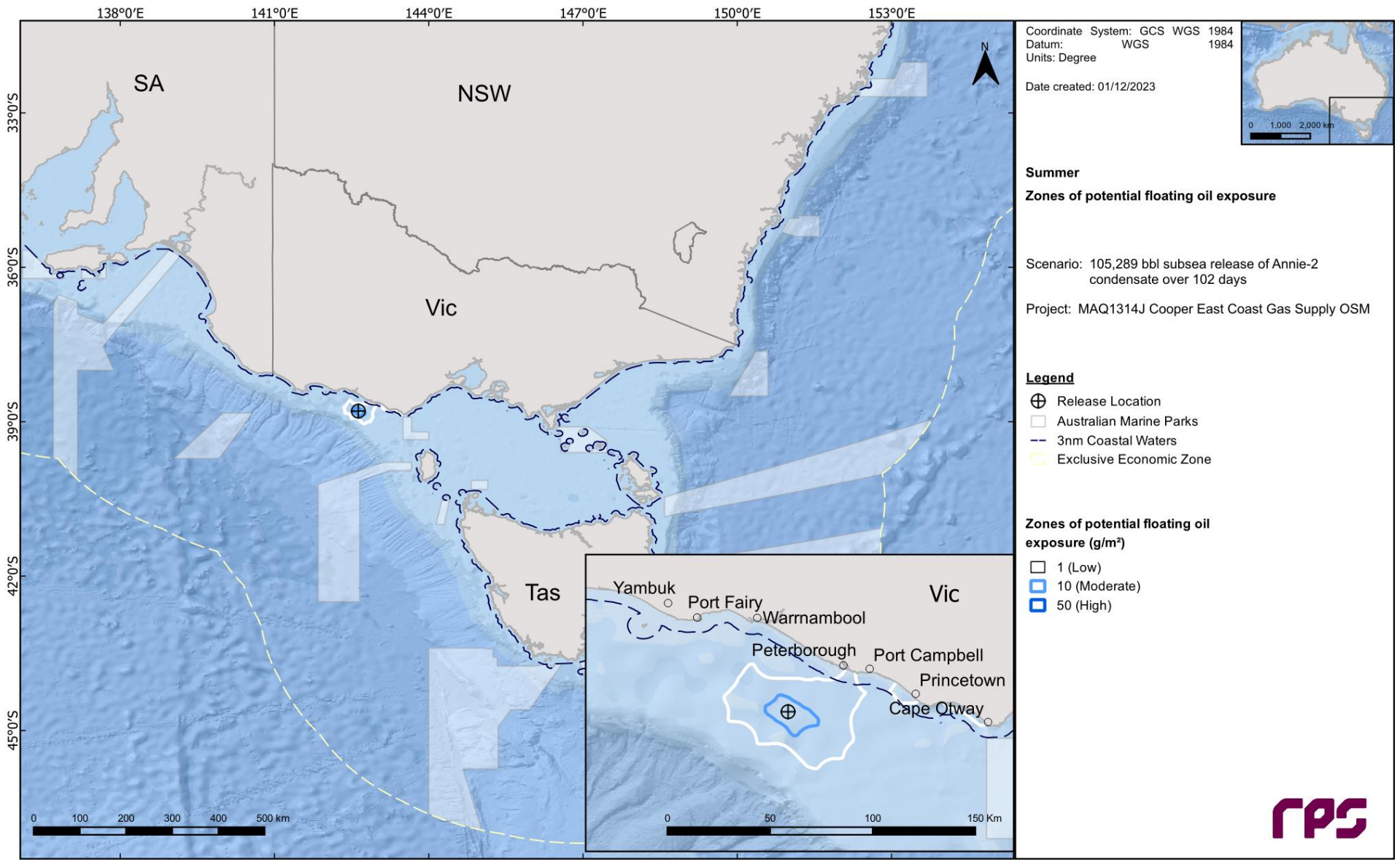

Figure 11.1 Zones of potential floating oil exposure in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

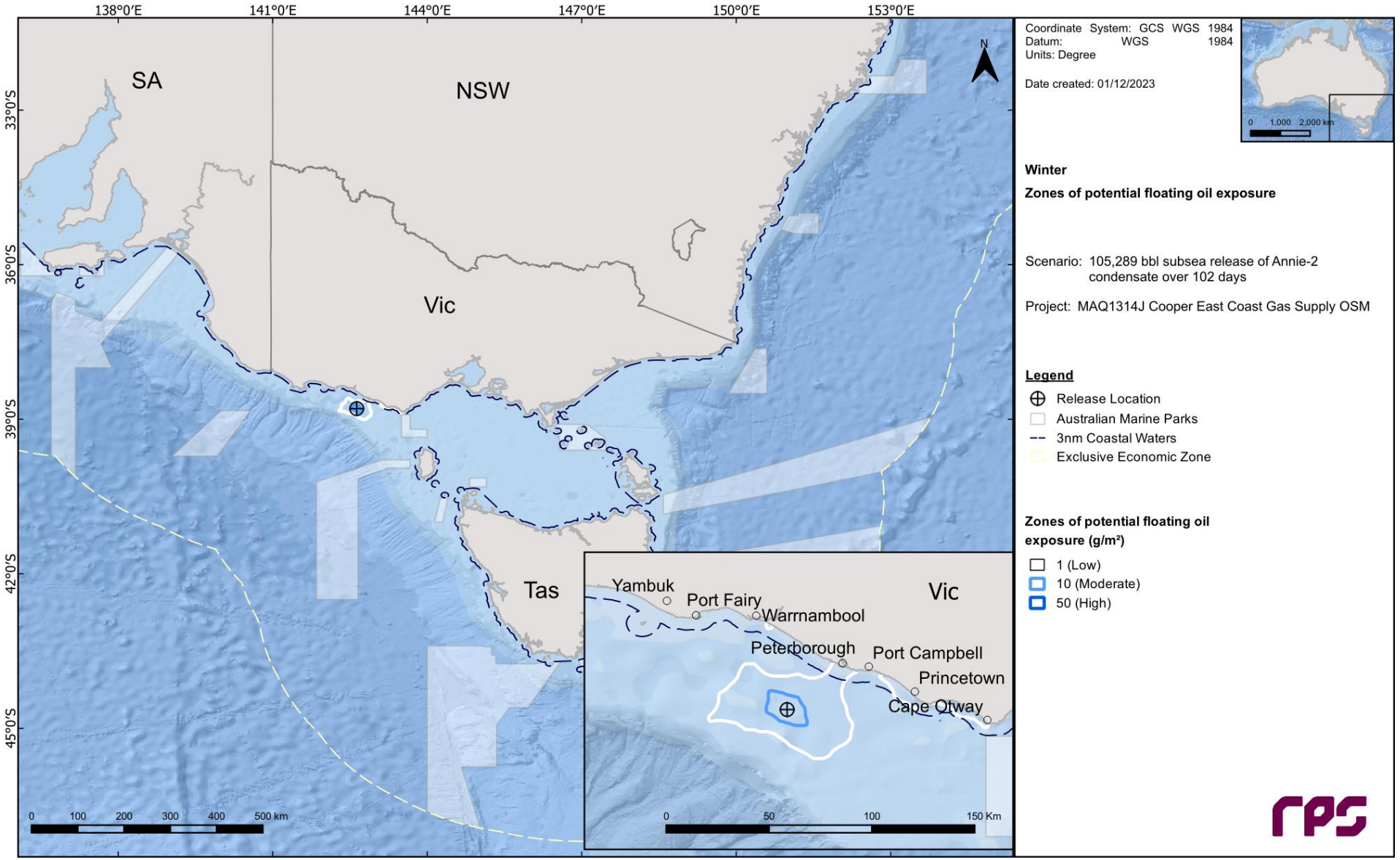

Figure 11.2 Zones of potential floating oil exposure in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

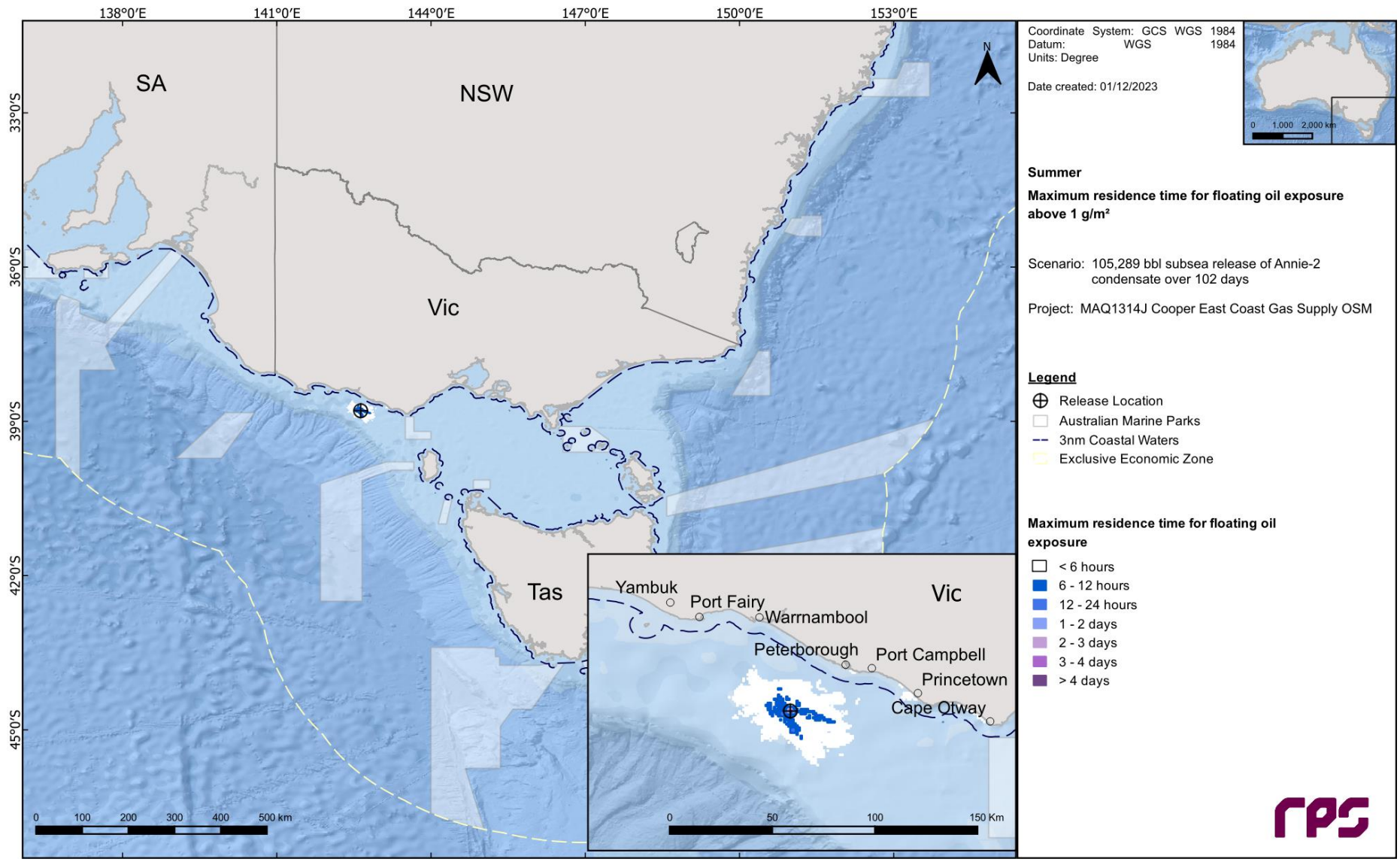

Figure 11.3 Maximum residence time of floating oil exposure above 1 g/m^2, in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

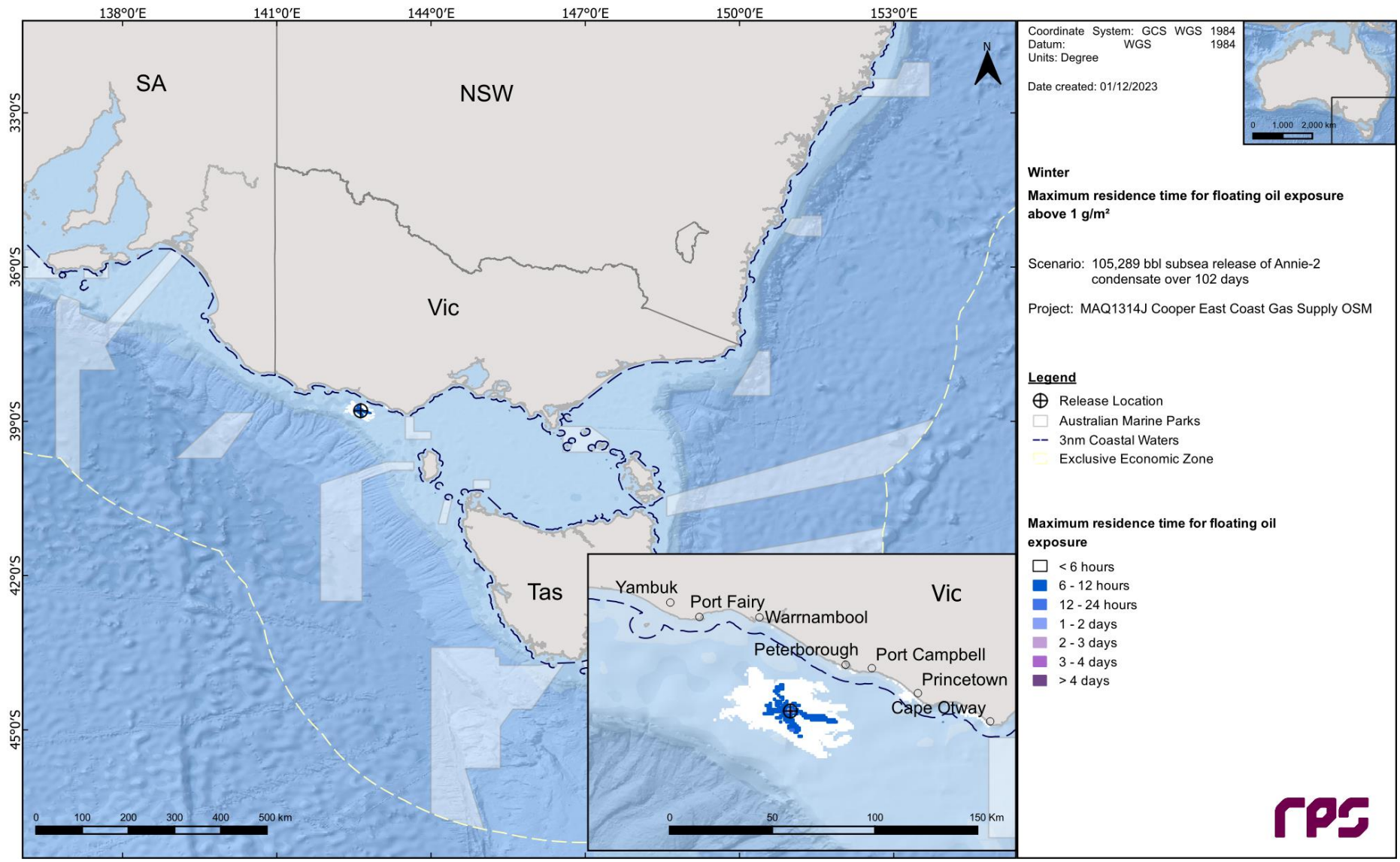

Figure 11.4 Maximum residence time of floating oil exposure above 1 g/m^2, in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

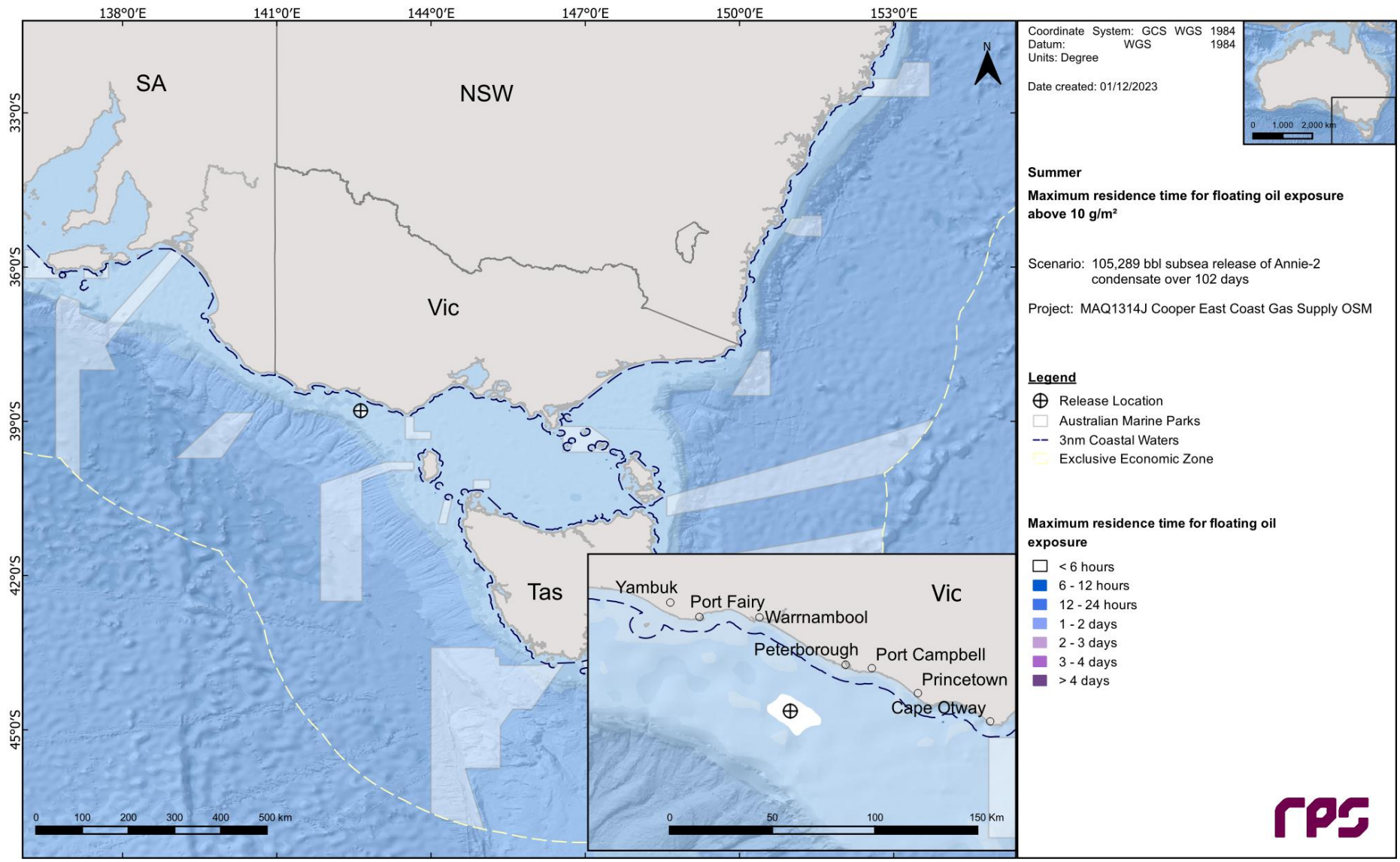

Figure 11.5 Maximum residence time of floating oil exposure above 10 g/m^2, in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

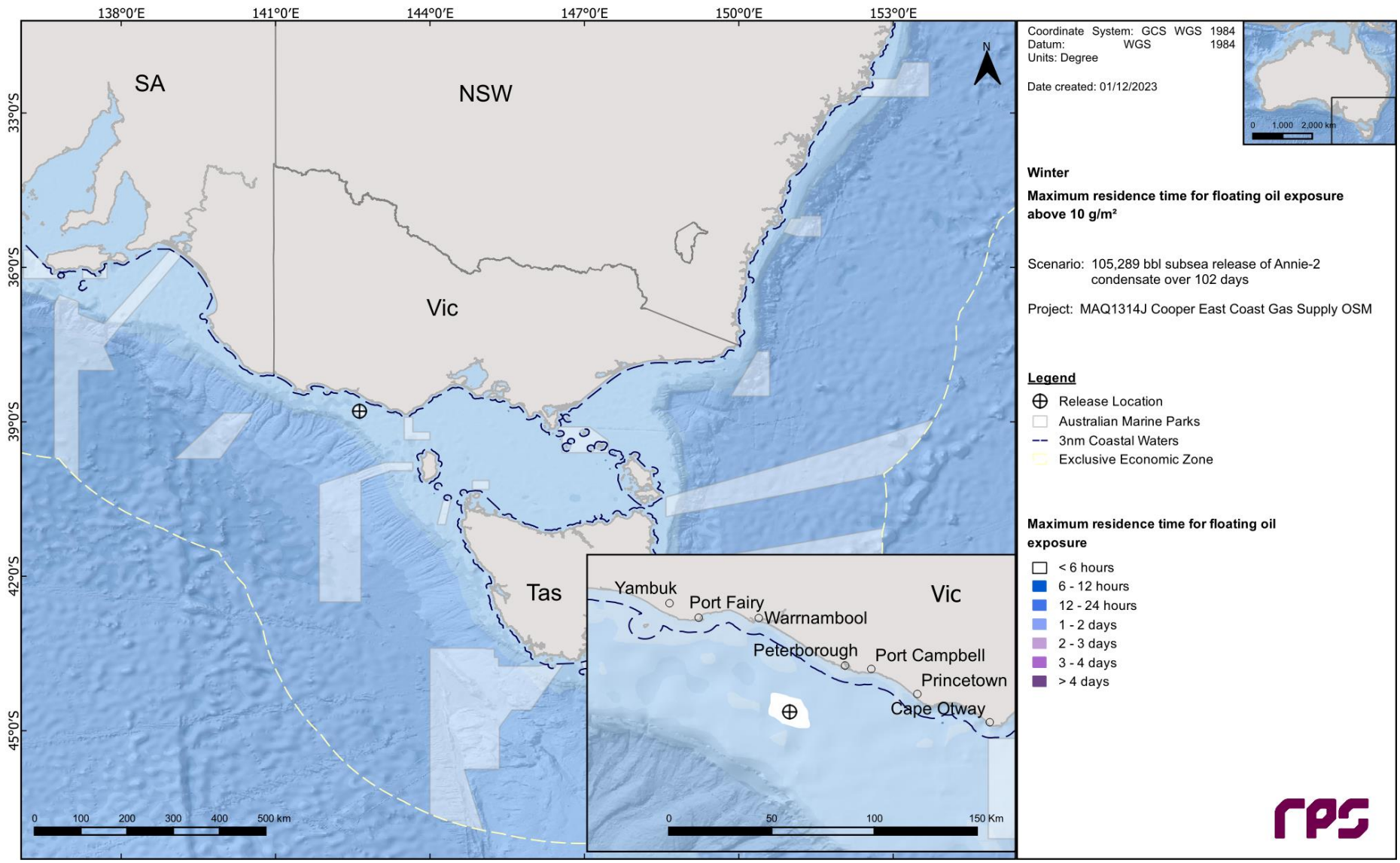

Figure 11.6 Maximum residence time of floating oil exposure above 10 g/m^2, in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

11.1.2 Shoreline Accumulation

Table 11.4 presents a summary of the potential shoreline accumulation. The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 100% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 1.83 days (winter). The maximum total volume ashore for a single spill trajectory was 251.0 m^3, and the maximum length of shoreline with accumulation above the low, moderate and high thresholds were 295.0 km, 48.0 km and 1.0 km, respectively, all occurring during winter.

Table 11.5 and Table 11.6 summarises the shoreline accumulation on individual receptors during summer and winter, respectively.

During summer, the shoreline segment of Colac Otway LGA as well as the Cape Otway West sub-LGA had the highest probability of accumulation above the low (99%) and moderate (69%) thresholds. Bay of Islands and Moyne also revealed a 1% probability of accumulation above the high threshold. The minimum time for low threshold shoreline accumulation was 3.38 days for the Corangamite shoreline segment.

Through winter, the shoreline segment of Colac Otway as well as the Cape Otway West sub-LGA had the highest probability of accumulation above the low and moderate thresholds (100% and 85%, respectively). Again, only few receptors revealed a 1% probability of accumulation above the high threshold. The minimum time for low threshold shoreline accumulation was 1.83 days for the Bay of Islands and Moyne shoreline segments.

The maximum potential shoreline loadings above each shoreline thresholds are presented in Figure 11.7 and Figure 11.8 for summer and winter, respectively.

Table 11.4 Summary of oil accumulation across all shorelines. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations per season.

Shoreline Statistics	Summer	Winter
Probability of accumulation on any shoreline (%)	100	100
Absolute minimum time for visible oil to shore (days)	3.38	1.83
Maximum total volume of hydrocarbons ashore (m^3)	189.6	251.0
Average total volume of hydrocarbons ashore (m^3)	68.0	98.8
Maximum length of the shoreline at **10 g/m^2** (km)	264.0	295.0
Average shoreline length (km) at **10 g/m^2** (km)	109.8	142.2
Maximum length of the shoreline at **100 g/m^2** (km)	37.0	48.0
Average shoreline length (km) at **100 g/m^2** (km)	12.4	18.3
Maximum length of the shoreline at **1,000 g/m^2** (km)	1.0	1.0
Average shoreline length (km) at **1,000 g/m^2** (km)	1.0	1.0

Table 11.5 Summary of oil accumulation on individual shoreline receptors. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
LGA Shoreline	Anglesea	22	1	-	16.88	67.13	-	5	100	1.4	12.3	5.9	0.9	-	19.1	0.9	-
	Anser Island	20	-	-	18.75	-	-	6	68	0.5	1.8	2.6	-	-	3.6	-	-
	Apollo Bay	90	11	-	5.13	52.54	-	13	167	4.6	18.5	10.7	2.3	-	23.6	4.5	-
	Bass Coast	3	-	-	92.71	-	-	2	22	0.3	1.1	1.2	-	-	1.8	-	-
	Bay of Islands	81	30	1	5.54	17.88	106.67	19	1,068	6.7	69.5	12.9	3	0.9	28.2	10.9	0.9
	Bega Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Colac Otway	99	69	-	3.58	6.58	-	24	686	26.8	78.6	35.5	7.1	-	72.7	20	-
	Corangamite	95	55	-	3.38	6.79	-	23	415	16.6	54.5	24.5	5.6	-	49.1	15.4	-
	Curtis Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	East Gippsland	23	-	-	16.29	-	-	3	55	1.3	3.9	3.9	-	-	7.3	-	-
	French Island	10	-	-	19.08	-	-	2	36	0.2	0.8	1.2	-	-	1.8	-	-
	Gabo Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Glenelg	41	-	-	8.08	-	-	5	83	3.9	12.8	10.7	-	-	27.3	-	-
	Glennie Group	25	-	-	16.96	-	-	5	55	0.7	3.4	3.4	-	-	9.1	-	-
	Grant	7	-	-	27.83	-	-	2	18	0.6	1.3	1.2	-	-	1.8	-	-
	Greater Geelong	16	-	-	19.5	-	-	3	80	0.9	4.8	5.6	-	-	15.4	-	-
	Hogan Island Group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Kanowna Island	13	-	-	18.75	-	-	4	37	0.3	1.7	2.9	-	-	4.5	-	-
	Kent Island Group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	King Island	29	-	-	17.79	-	-	2	64	1.4	6.9	4.4	-	-	17.3	-	-
	Lady Julia Percy Island	45	1	-	13.13	14.96	-	12	136	1	5.2	3	1.8	-	5.5	1.8	-
	Laurence Rocks	23	-	-	17.67	-	-	8	38	0.3	0.8	1.9	-	-	2.7	-	-
	Moncoeur Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Montague Island	2	-	-	114.75	-	-	3	14	0.1	0.3	0.9	-	-	0.9	-	-
	Mornington Peninsula	25	-	-	16.17	-	-	4	77	2.4	12.8	12.1	-	-	29.1	-	-
	Moyne	85	30	1	5.54	17.88	106.67	12	1,068	9.3	73	18	3.3	0.9	52.7	10.9	0.9
	Norman Island	14	-	-	20.38	-	-	4	31	0.2	0.7	1.4	-	-	1.8	-	-
	Phillip Island	25	-	-	16.25	-	-	3	67	1	5.6	4.1	-	-	10.9	-	-
	Rodondo Island	14	-	-	62.33	-	-	5	48	0.2	1	1.4	-	-	1.8	-	-
	Seal Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Shellback Island	4	-	-	59.17	-	-	4	16	< 0.1	0.3	0.9	-	-	0.9	-	-
	Skull Rock	10	-	-	19.29	-	-	4	37	0.2	0.9	1.3	-	-	1.8	-	-
	South Gippsland	31	6	-	16.63	71.25	-	4	121	2.9	15.5	11.4	1.1	-	28.2	1.8	-
	Surf Coast	30	5	-	9.96	60.79	-	5	136	3.2	30.9	11.1	2.2	-	40.9	4.5	-
	Warrnambool	47	8	-	8.83	41.54	-	9	160	2.7	14.8	8.1	1.7	-	23.6	2.7	-
	Wellington	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-LGA Shoreline	Bega Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cape Conran	6	-	-	53.75	-	-	3	15	0.2	0.4	0.9	-	-	0.9	-	-
	Cape Howe / Mallacoota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cape Liptrap (NW)	22	-	-	16.63	-	-	3	72	0.6	3.8	2.8	-	-	6.4	-	-
	Cape Nelson	41	-	-	8.08	-	-	6	83	3.3	10	10	-	-	24.5	-	-
	Cape Otway West	99	69	-	3.58	6.58	-	42	686	20.4	51.8	21.9	6.7	-	35.4	15.4	-
	Cape Patton	51	-	-	8.33	-	-	6	91	1.7	10.1	6.6	-	-	20.9	-	-

Shoreline Receptor	Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
	Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Childers Cove	61	9	-	8.83	41.54	-	10	160	3.1	16.4	7.8	1.9	-	20	3.6	-
Clonmel Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croajingolong (West)	14	-	-	16.29	-	-	3	55	0.4	1.5	1.9	-	-	3.6	-	-
Discovery Bay (East)	5	-	-	36.42	-	-	2	15	0.3	1	0.9	-	-	0.9	-	-
Discovery Bay (West)	2	-	-	63.04	-	-	2	11	0.3	0.9	0.9	-	-	0.9	-	-
French Island / Crib Point	11	-	-	17.63	-	-	3	43	0.2	0.7	1.2	-	-	1.8	-	-
Kilcunda	2	-	-	92.71	-	-	2	17	0.2	0.7	0.9	-	-	0.9	-	-
Lake Tyers Beach	2	-	-	103.79	-	-	2	25	0.3	1	1.4	-	-	1.8	-	-
Lorne	25	-	-	9.96	-	-	4	58	1.1	5.1	6	-	-	12.7	-	-
Marlo	1	-	-	105.54	-	-	2	23	0.1	0.6	0.9	-	-	0.9	-	-
Moonlight Head	92	53	-	3.38	6.79	-	27	341	10.8	39	13.5	4.8	-	24.5	12.7	-
Mornington Peninsula (S)	16	-	-	16.46	-	-	4	77	0.8	3.8	4.4	-	-	8.2	-	-
Mornington Peninsula (SW)	25	-	-	16.17	-	-	5	59	1.4	7	7.5	-	-	14.5	-	-
New South Wales	2	-	-	114.75	-	-	2	14	0.3	1.3	0.9	-	-	0.9	-	-
Point Hicks	21	-	-	50.79	-	-	4	44	0.6	1.7	2.6	-	-	3.6	-	-
Port Campbell	81	24	-	4.21	8.04	-	18	415	5.9	27.6	13.2	2.2	-	26.4	6.4	-
Port Fairy	42	3	-	7.13	25.25	-	5	124	1.4	6	4.2	0.9	-	13.6	0.9	-
Port Phillip (Queenscliff)	16	-	-	19.5	-	-	3	30	0.5	2.5	2.6	-	-	9.1	-	-
Port Phillip (Sorrento Shore)	8	-	-	16.58	-	-	3	15	0.3	0.7	1.4	-	-	2.7	-	-
Port Welshpool	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portland Bay (East)	2	-	-	24.54	-	-	2	22	0.2	2.4	5	-	-	9.1	-	-
Portland Bay (West)	6	-	-	15	-	-	2	19	0.3	1.6	2	-	-	3.6	-	-
Snake Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South Australia State Waters	7	-	-	27.83	-	-	2	18	0.6	1.6	1.2	-	-	1.8	-	-
Tasmania State Waters	29	-	-	17.79	-	-	2	64	1.8	8.2	4.4	-	-	17.3	-	-
Torquay	15	5	-	16.33	60.79	-	6	136	2	19.8	9.8	2	-	24.5	3.6	-
Venus Bay	2	-	-	104.5	-	-	2	22	0.2	0.9	0.9	-	-	0.9	-	-
Victoria State Waters	100	82	1	3.38	6.58	106.67	14	1,068	66.1	186.8	98.4	11.3	0.9	239.9	33.6	0.9
Waratah Bay	4	-	-	16.88	-	-	2	19	0.1	0.5	0.9	-	-	0.9	-	-
Warrnambool	39	1	-	15	49.54	-	6	117	1.5	7.4	5.3	0.9	-	15.4	0.9	-
Westernport	8	-	-	17.38	-	-	2	24	0.3	1.3	2.5	-	-	3.6	-	-
Wilsons Promontory (East)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wilsons Promontory (West)	30	6	-	16.88	71.25	-	6	121	2.3	12.7	9.6	1.1	-	23.6	1.8	-

Table 11.6 Summary of oil accumulation on individual shoreline receptors. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
LGA Shoreline	Anglesea	31	-	-	13.79	-	-	4	68	0.9	6.7	4.3	-	-	13.6	-	-
	Anser Island	57	-	-	16.42	-	-	10	76	0.8	2.6	2.3	-	-	4.5	-	-
	Apollo Bay	100	20	-	4.17	15.42	-	14	265	5.3	18.3	11	1.4	-	21.8	3.6	-
	Bass Coast	17	-	-	13.42	-	-	2	33	0.6	2.6	2	-	-	5.5	-	-
	Bay of Islands	87	25	-	1.83	11.38	-	20	398	6.8	23.1	11.8	3.2	-	25.4	5.5	-
	Bega Valley	30	-	-	32.96	-	-	3	58	0.8	3.3	1.9	-	-	4.5	-	-
	Colac Otway	100	85	-	3.75	6.63	-	35	912	42	88	44.1	10.2	-	65.4	20	-
	Corangamite	98	69	1	1.88	9.46	82.29	33	1,008	25.3	130.1	30.4	6.4	0.9	57.2	22.7	0.9
	Curtis Island	1	-	-	52.08	-	-	2	12	0.1	0.5	1.8	-	-	1.8	-	-
	East Gippsland	60	5	-	32.04	56.96	-	4	125	2.6	8.5	4.2	1.1	-	10.9	1.8	-
	French Island	7	-	-	13.71	-	-	2	15	0.1	0.5	1.2	-	-	1.8	-	-
	Gabo Island	13	-	-	49.83	-	-	5	35	0.2	1	2.1	-	-	3.6	-	-
	Glenelg	24	3	-	11.92	29.25	-	5	181	4.3	24.5	13.1	1.5	-	45.4	1.8	-
	Glennie Group	59	-	-	13.63	-	-	9	87	1.4	5.2	4.5	-	-	10.9	-	-
	Grant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Greater Geelong	12	-	-	14.38	-	-	3	88	0.6	4.1	5.2	-	-	14.5	-	-
	Hogan Island Group	4	-	-	45.75	-	-	2	16	0.2	0.6	0.9	-	-	0.9	-	-
	Kanowna Island	43	-	-	19.46	-	-	6	50	0.5	1.6	2.3	-	-	4.5	-	-
	Kent Island Group	3	-	-	62.33	-	-	2	27	0.2	1.2	1.8	-	-	2.7	-	-
	King Island	22	-	-	23.71	-	-	2	74	1.4	8.4	6.4	-	-	20.9	-	-
	Lady Julia Percy Island	31	7	-	15.42	29.54	-	16	199	1.4	6.4	3.3	2.1	-	6.4	2.7	-
	Laurence Rocks	17	-	-	11.5	-	-	9	33	0.3	1	1.5	-	-	2.7	-	-
	Moncoeur Islands	6	-	-	27.5	-	-	3	14	0.2	0.6	0.9	-	-	0.9	-	-
	Montague Island	11	-	-	43.04	-	-	6	37	0.3	1.4	2.8	-	-	3.6	-	-
	Mornington Peninsula	38	-	-	11.58	-	-	3	59	2	11.6	7.2	-	-	24.5	-	-
	Moyne	87	30	-	1.83	11.38	-	14	398	9.6	42.6	18.4	3	-	77.2	6.4	-
	Norman Island	38	-	-	13.00	-	-	6	29	0.3	1	2	-	-	4.5	-	-
	Phillip Island	55	-	-	11.63	-	-	4	67	1.7	7	5.7	-	-	16.4	-	-
	Rodondo Island	47	-	-	18.13	-	-	8	94	0.4	2	1.7	-	-	2.7	-	-
	Seal Islands	2	-	-	46.46	-	-	2	13	< 0.1	0.3	0.9	-	-	0.9	-	-
	Shellback Island	16	-	-	22.17	-	-	5	34	0.1	0.6	1.1	-	-	1.8	-	-
	Skull Rock	38	-	-	19.46	-	-	7	31	0.3	0.7	1.3	-	-	1.8	-	-
	South Gippsland	64	17	-	11.88	41.63	-	8	204	6	18.9	14	1.6	-	30	1.8	-
	Surf Coast	51	1	-	12.79	16.88	-	4	110	2.3	21.6	7.4	1.8	-	34.5	1.8	-
	Warrnambool	44	5	-	4.25	5.92	-	11	207	3.2	11.2	8.2	1.6	-	20.9	3.6	-
	Wellington	3	-	-	47.63	-	-	2	27	0.4	4	2.1	-	-	2.7	-	-
Sub-LGA Shoreline	Bega Valley	30	-	-	32.96	-	-	3	58	0.8	3.3	1.9	-	-	4.5	-	-
	Cape Conran	3	-	-	55.38	-	-	2	14	0.1	0.7	0.9	-	-	0.9	-	-
	Cape Howe / Mallacoota	15	-	-	46.63	-	-	3	38	0.2	1.6	1.6	-	-	4.5	-	-
	Cape Liptrap (NW)	52	-	-	12.21	-	-	6	76	1.1	4	3.3	-	-	7.3	-	-
	Cape Nelson	24	3	-	11.92	29.25	-	6	181	2.9	16.1	8.5	1.5	-	26.4	1.8	-
	Cape Otway West	100	85	-	3.75	6.63	-	68	912	33.9	80.5	26.2	9.9	-	35.4	20	-
	Cape Patton	80	-	-	8.13	-	-	7	99	2.6	8.4	7.6	-	-	19.1	-	-

Shoreline Receptor	Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
	Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Childers Cove	48	4	-	4.67	5.92	-	12	207	3.6	14.7	10.2	1.8	-	18.2	4.5	-
Clonmel Island	2	-	-	53.71	-	-	2	26	0.2	1.3	1.4	-	-	1.8	-	-
Croajingolong (West)	35	-	-	37.83	-	-	4	67	0.5	2	1.7	-	-	4.5	-	-
Discovery Bay (East)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discovery Bay (West)	1	-	-	104.75	-	-	2	15	0.2	0.7	0.9	-	-	0.9	-	-
French Island / Crib Point	9	-	-	12.83	-	-	2	25	0.1	0.6	1.1	-	-	1.8	-	-
Kilcunda	14	-	-	13.42	-	-	3	24	0.3	1.3	1.6	-	-	2.7	-	-
Lake Tyers Beach	1	-	-	59.88	-	-	2	10	0.2	0.9	0.9	-	-	0.9	-	-
Lorne	48	-	-	12.79	-	-	4	49	1.1	3.8	4.4	-	-	11.8	-	-
Marlo	14	-	-	46.58	-	-	2	51	0.2	1.2	1.1	-	-	1.8	-	-
Moonlight Head	98	62	1	3.54	9.46	82.29	43	1,008	17.4	97.5	17.4	5.6	0.9	30	15.4	0.9
Mornington Peninsula (S)	29	-	-	11.71	-	-	4	59	0.6	3.9	2.8	-	-	9.1	-	-
Mornington Peninsula (SW)	26	-	-	11.58	-	-	4	57	0.9	5.5	5	-	-	13.6	-	-
New South Wales	31	-	-	32.96	-	-	3	58	1	4.1	2.8	-	-	7.3	-	-
Point Hicks	56	5	-	32.04	56.96	-	10	125	1.3	4.9	2.7	1.1	-	5.5	1.8	-
Port Campbell	89	31	-	1.88	9.5	-	23	305	8.1	33.7	13.8	3.1	-	26.4	8.2	-
Port Fairy	32	5	-	15.50	17.29	-	6	122	1.8	9.1	5.3	0.9	-	23.6	0.9	-
Port Phillip (Queenscliff)	10	-	-	34.46	-	-	3	28	0.3	2.4	3.2	-	-	7.3	-	-
Port Phillip (Sorrento Shore)	14	-	-	12.13	-	-	3	40	0.3	1.7	2.3	-	-	4.5	-	-
Port Welshpool	3	-	-	69.00	-	-	2	14	0.1	0.6	1.2	-	-	1.8	-	-
Portland Bay (East)	7	-	-	18.13	-	-	3	28	0.7	3.9	6.5	-	-	11.8	-	-
Portland Bay (West)	7	-	-	26.25	-	-	6	70	2.1	8	14.9	-	-	18.2	-	-
Snake Island	3	-	-	47.63	-	-	2	27	0.1	1.2	1.2	-	-	1.8	-	-
South Australia State Waters	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tasmania State Waters	24	-	-	23.71	-	-	2	74	1.6	8.9	6.3	-	-	20.9	-	-
Torquay	28	1	-	13.75	16.88	-	4	110	1	16.9	5.4	1.8	-	23.6	1.8	-
Venus Bay	12	-	-	13.67	-	-	2	33	0.3	1.3	1.1	-	-	2.7	-	-
Victoria State Waters	100	88	1	1.83	5.92	82.29	17	1,008	96.6	248.8	126.8	16.6	0.9	268.1	43.6	0.9
Waratah Bay	6	-	-	31.75	-	-	2	29	0.2	2.2	1.8	-	-	4.5	-	-
Warrnambool	31	5	-	4.25	8.63	-	7	161	2	12.5	7.7	1.1	-	23.6	1.8	-
Westernport	11	-	-	12.54	-	-	2	24	0.3	1.4	1.9	-	-	3.6	-	-
Wilsons Promontory (East)	2	-	-	40.08	-	-	2	14	0.2	1.7	1.4	-	-	1.8	-	-
Wilsons Promontory (West)	63	17	-	11.88	41.63	-	11	204	4.6	14.3	11.2	1.6	-	21.8	1.8	-

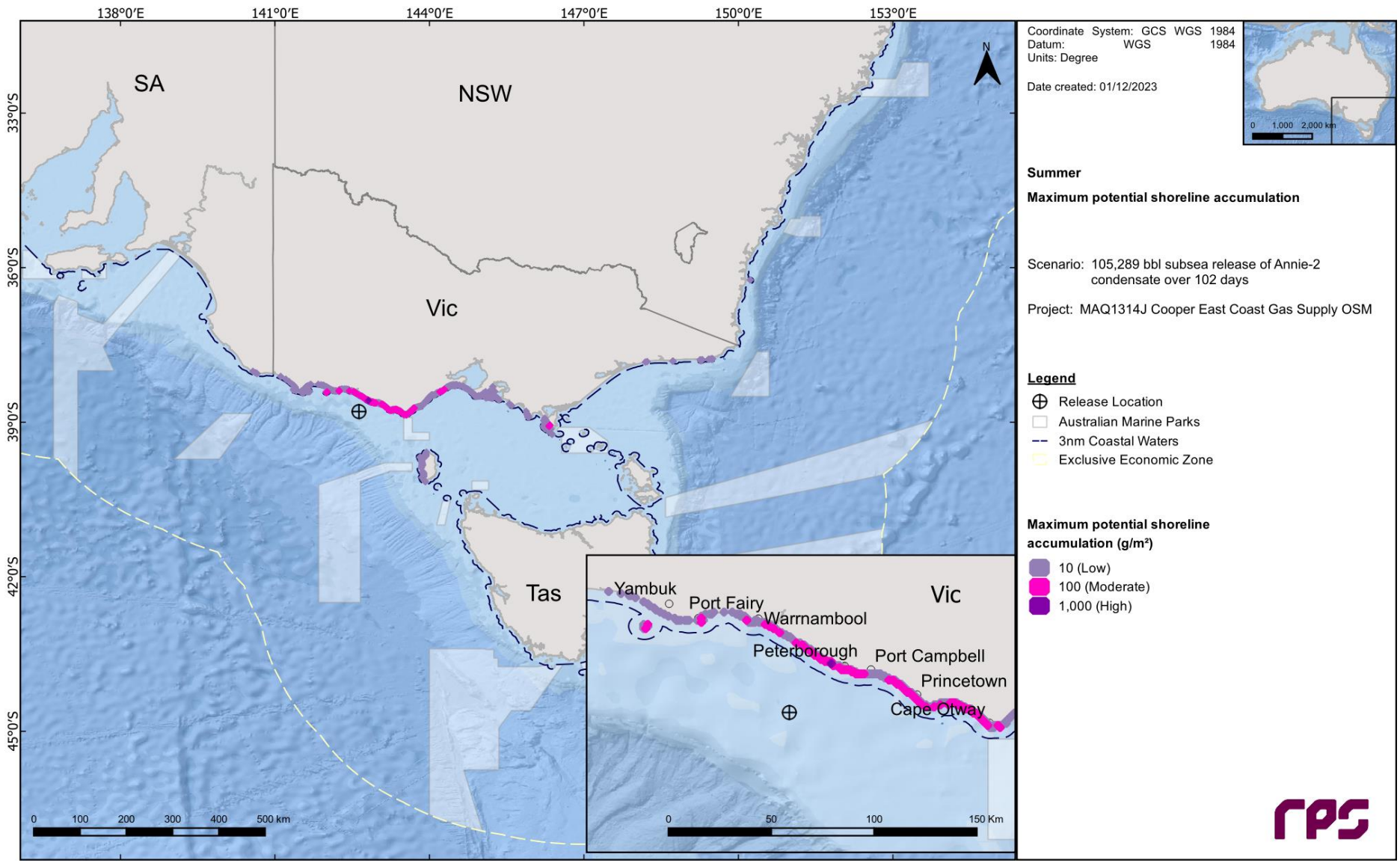

Figure 11.7 Maximum potential shoreline accumulation in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

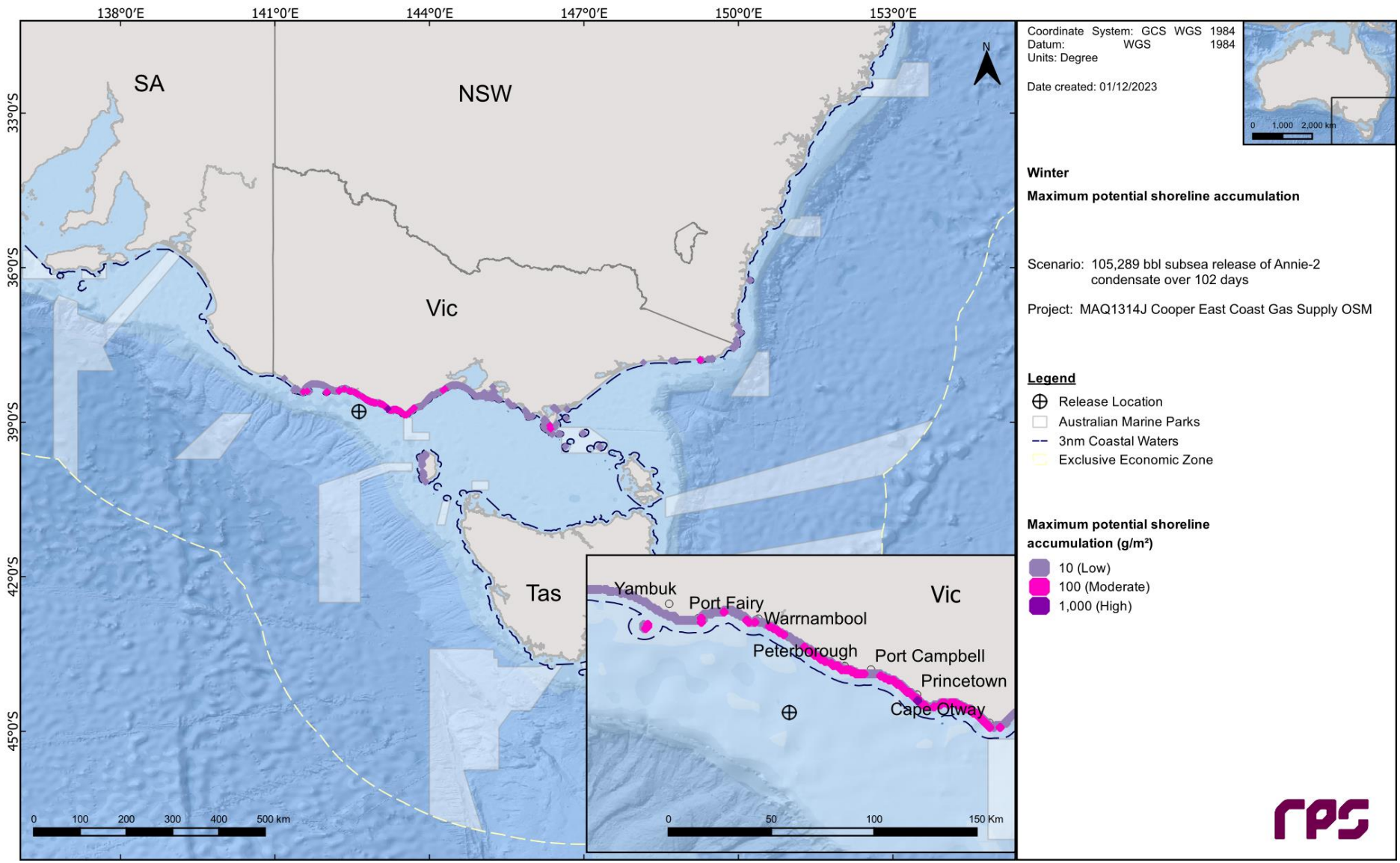

Figure 11.8 Maximum potential shoreline accumulation in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

11.1.3 In-water exposure

11.1.3.1 Dissolved Hydrocarbons

Table 11.7 summarises the potential in-water exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer.

During summer conditions, a total of 20 BIAs were predicted to be exposed to dissolved hydrocarbon at, or above, the low threshold. Excluding the BIAs that the release location resides within (see Section 10.3), the highest probability of low exposure ranged between 2% (Australasian Gannet - Foraging) and 15% (Southern Right Whale - Aggregation).

Alternatively, during winter, excluding the BIAs that the release location resides within (see Section 10.3), the probability of low exposure ranged between 1% (Australasian Gannet - Foraging) and 21% (Short-tailed Shearwater - Foraging).

The maximum dissolved hydrocarbon concentration at any given receptor(s) was shown to be 51.8 ppb and 60.2 ppb for summer and winter conditions, respectively.

Table 11.8 presents the predicted minimum time to dissolved hydrocarbon exposure and maximum residence time for dissolved hydrocarbon exposure to individual receptors, in the 0-10 m depth layer, for all thresholds assessed.

Figure 11.9 and Figure 11.10 present the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layer for each season whilst Figure 11.11 Figure 11.12 present the maximum residence time of dissolved hydrocarbon exposure for the NOPSEMA thresholds.

Table 11.7 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer				Winter			
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)		
			Low	Moderate	High		Low	Moderate	High
AMP	Apollo	19.1	5	-	-	44.3	10	-	-
BIA	Antipodean Albatross - Foraging*	51.8	40	1	-	60.2	66	1	-
	Australasian Gannet - Foraging	17.9	2	-	-	14.3	1	-	-
	Black-browed Albatross - Foraging*	51.8	40	1	-	60.2	66	1	-
	Bullers Albatross - Foraging*	51.8	40	1	-	60.2	66	1	-
	Campbell Albatross - Foraging*	51.8	40	1	-	60.2	66	1	-
	Common Diving-petrel - Foraging*	51.8	40	1	-	60.2	66	1	-
	Indian Yellow-nosed Albatross - Foraging*	51.8	40	1	-	60.2	66	1	-
	Pygmy Blue Whale - Distribution*	51.8	40	1	-	60.2	66	1	-
	Pygmy Blue Whale - Foraging*	51.8	40	1	-	60.2	66	1	-
	Pygmy Blue Whale - Foraging annual high use area*	51.8	40	1	-	60.2	66	1	-
	Pygmy Blue Whale - Known Foraging Area	26.8	4	-	-	44.3	8	-	-
	Short-tailed Shearwater - Foraging	36.5	11	-	-	49.6	21	-	-
	Shy Albatross - Foraging*	51.8	40	1	-	60.2	66	1	-
	Southern Right Whale – Aggregation	34.9	15	-	-	30	17	-	-
	Southern Right Whale - Known Core Range* ^	51.8	40	1	-	60.2	66	1	-
	Wandering Albatross - Foraging*	51.8	40	1	-	60.2	66	1	-
	Wedge-tailed Shearwater - Foraging*	51.8	40	1	-	60.2	66	1	-
	White Shark - Distribution*	51.8	40	1	-	60.2	66	1	-
	White Shark - Foraging	18.8	3	-	-	25.4	4	-	-
	White-faced Storm-petrel - Foraging	26.8	4	-	-	33.9	7	-	-
IBRA	Otway Plain	23.3	4	-	-	34.4	16	-	-
	Otway Ranges	18.9	2	-	-	23.9	3	-	-
	Warrnambool Plain	30.7	5	-	-	25.1	5	-	-
IMCRA	Central Bass Strait	26.8	4	-	-	33.9	7	-	-
	Central Victoria	26.6	4	-	-	44.3	10	-	-

Receptor		Summer				Winter			
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)		
			Low	Moderate	High		Low	Moderate	High
	Otway*	51.8	40	1	-	60.2	66	1	-
KEF	Bonney Coast Upwelling	8.6	-	-	-	14.3	1	-	-
	West Tasmania Canyons	13.4	1	-	-	13.1	1	-	-
MNP	Twelve Apostles	30.7	6	-	-	21.5	6	-	-
RSB	Bravenes Rock	9.8	-	-	-	14.9	4	-	-
Nearshore Waters	Colac Otway	23.3	4	-	-	34.4	16	-	-
	Corangamite	30.7	5	-	-	25.1	5	-	-
	Moyne	23.8	1	-	-	15.6	3	-	-
	Warrnambool	3.9	-	-	-	16.3	1	-	-
State Waters	Victoria State Waters*	34.9	10	-	-	34.4	21	-	-
Nearshore Waters (Sub-LGA)	Apollo Bay	12.1	1	-	-	23.9	2	-	-
	Bay of Islands	23.8	1	-	-	15.6	3	-	-
	Cape Otway West	24.8	4	-	-	34.4	16	-	-
	Cape Patton	10.3	1	-	-	11.4	1	-	-
	Childers Cove	7.4	-	-	-	16.3	1	-	-
	Moonlight Head	30.7	5	-	-	25.1	5	-	-
	Port Campbell	11.6	1	-	-	12.6	2	-	-
	Warrnambool	3.8	-	-	-	11.5	1	-	-

*The release location resides within the receptor boundaries.

^ RPS have utilised BIA's for the southern right whale that were delineated within the 2011-2021 Southern Right Whale. The NCV Atlas now includes updated BIA's for SRW, though the recently drafted National Recovery Plan for the southern right whale has not been published. The updated BIA's have not been used in this report.

Table 11.8 Predicted minimum time to dissolved hydrocarbon exposure and maximum residence time for dissolved hydrocarbon exposure to individual receptors in the 0-10 m depth layer. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer						Winter					
		Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
AMP	Apollo	3.50	-	-	0.13	-	-	2.54	-	-	0.13	-	-
BIA	Antipodean Albatross - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Australasian Gannet - Foraging	7.29	-	-	0.08	-	-	11.25	-	-	0.04	-	-
	Black-browed Albatross - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Bullers Albatross - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Campbell Albatross - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Common Diving-petrel - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Indian Yellow-nosed Albatross - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Pygmy Blue Whale - Distribution*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Pygmy Blue Whale - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Pygmy Blue Whale - Foraging annual high use area*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Pygmy Blue Whale - Known Foraging Area	3.54	-	-	0.13	-	-	3.04	-	-	0.13	-	-
	Short-tailed Shearwater - Foraging	2.08	-	-	0.17	-	-	1.88	15.79	-	0.21	-	-
	Shy Albatross - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Southern Right Whale – Aggregation	1.25	-	-	0.13	-	-	1.88	-	-	0.17	-	-
	Southern Right Whale - Known Core Range* ^	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Wandering Albatross - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	Wedge-tailed Shearwater - Foraging*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	White Shark - Distribution*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
	White Shark - Foraging	6.46	-	-	0.08	-	-	6.13	-	-	0.08	-	-
	White-faced Storm-petrel - Foraging	3.58	-	-	0.13	-	-	3.04	-	-	0.13	-	-
IBRA	Otway Plain	7.38	-	-	0.17	-	-	5.92	-	-	0.13	-	-

Receptor		Summer						Winter					
		Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	Otway Ranges	6.46	-	-	0.04	-	-	4.88	-	-	0.08	-	-
	Warrnambool Plain	15.88	-	-	0.13	-	-	9.71	-	-	0.08	-	-
IMCRA	Central Bass Strait	6.67	-	-	0.13	-	-	3.04	-	-	0.13	-	-
	Central Victoria	3.58	-	-	0.13	-	-	3.96	-	-	0.13	-	-
	Otway*	0.71	31.92	-	0.29	-	-	0.42	5.79	-	0.33	-	-
KEF	Bonney Coast Upwelling	-	-	-	-	-	-	18.54	-	-	0.04	-	-
KEF	West Tasmania Canyons	13.50	-	-	0.08	-	-	21.96	-	-	0.04	-	-
MNP	Twelve Apostles	7.71	-	-	0.13	-	-	4.96	-	-	0.08	-	-
RSB	Bravenes Rock	24.25	-	-	0.04	-	-	10.25	-	-	0.04	-	-
Nearshore Waters	Colac Otway	6.46	-	-	0.17	-	-	4.88	-	-	0.13	-	-
	Corangamite	16.33	-	-	0.13	-	-	9.71	-	-	0.08	-	-
	Moyne	21.79	-	-	0.08	-	-	10.25	-	-	0.08	-	-
	Warrnambool	-	-	-	-	-	-	10.71	-	-	0.04	-	-
State Waters	Victoria State Waters*	3.08	-	-	0.17	-	-	3.83	-	-	0.21	-	-
Nearshore Waters (Sub-LGA)	Apollo Bay	6.46	-	-	0.04	-	-	4.88	-	-	0.08	-	-
	Bay of Islands	21.79	-	-	0.08	-	-	10.25	-	-	0.08	-	-
	Cape Otway West	5.04	-	-	0.17	-	-	5.75	-	-	0.13	-	-
	Cape Patton	8.58	-	-	0.04	-	-	25.79	-	-	0.04	-	-
	Childers Cove	-	-	-	-	-	-	10.96	-	-	0.04	-	-
	Moonlight Head	15.88	-	-	0.13	-	-	9.71	-	-	0.08	-	-
	Port Campbell	18.42	-	-	0.04	-	-	9.83	-	-	0.04	-	-
	Warrnambool	-	-	-	-	-	-	10.71	-	-	0.04	-	-

*The release location resides within the receptor boundaries.

^ RPS have utilised BIA's for the southern right whale that were delineated within the 2011-2021 Southern Right Whale. The NCV Atlas now includes updated BIA's for SRW, though the recently drafted National Recovery Plan for the southern right whale has not been published. The updated BIA's have not been used in this report.

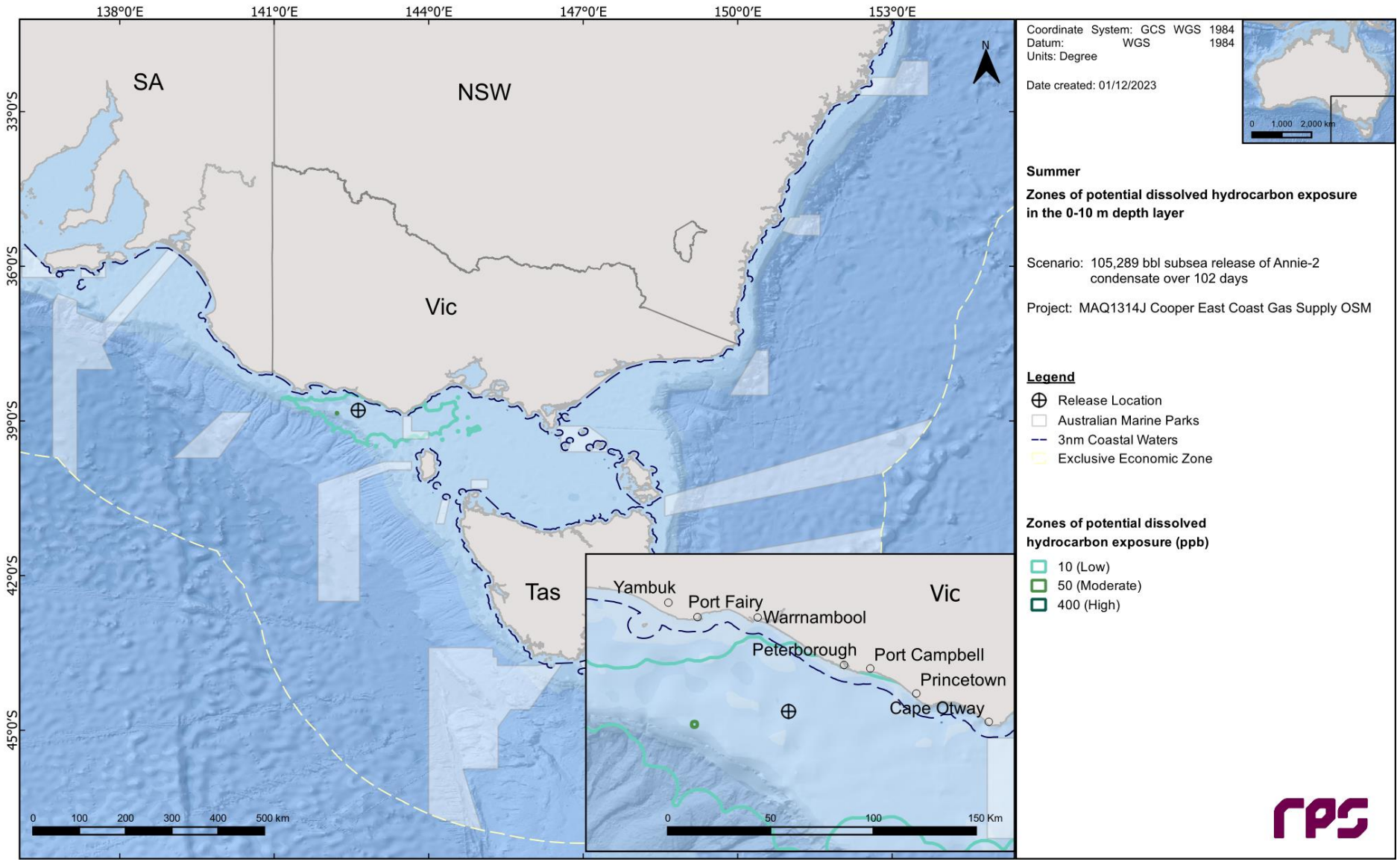

Figure 11.9 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

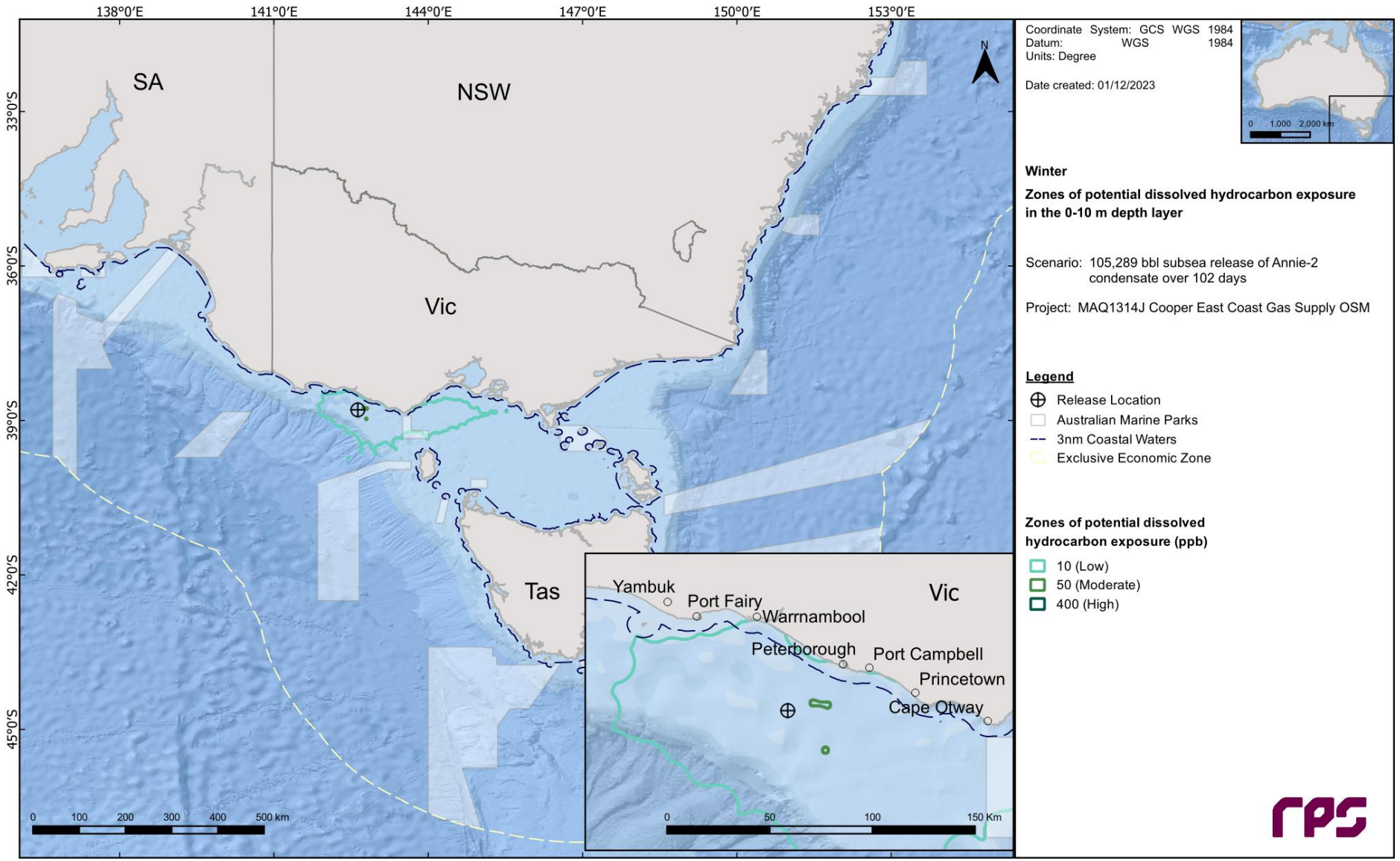

Figure 11.10 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

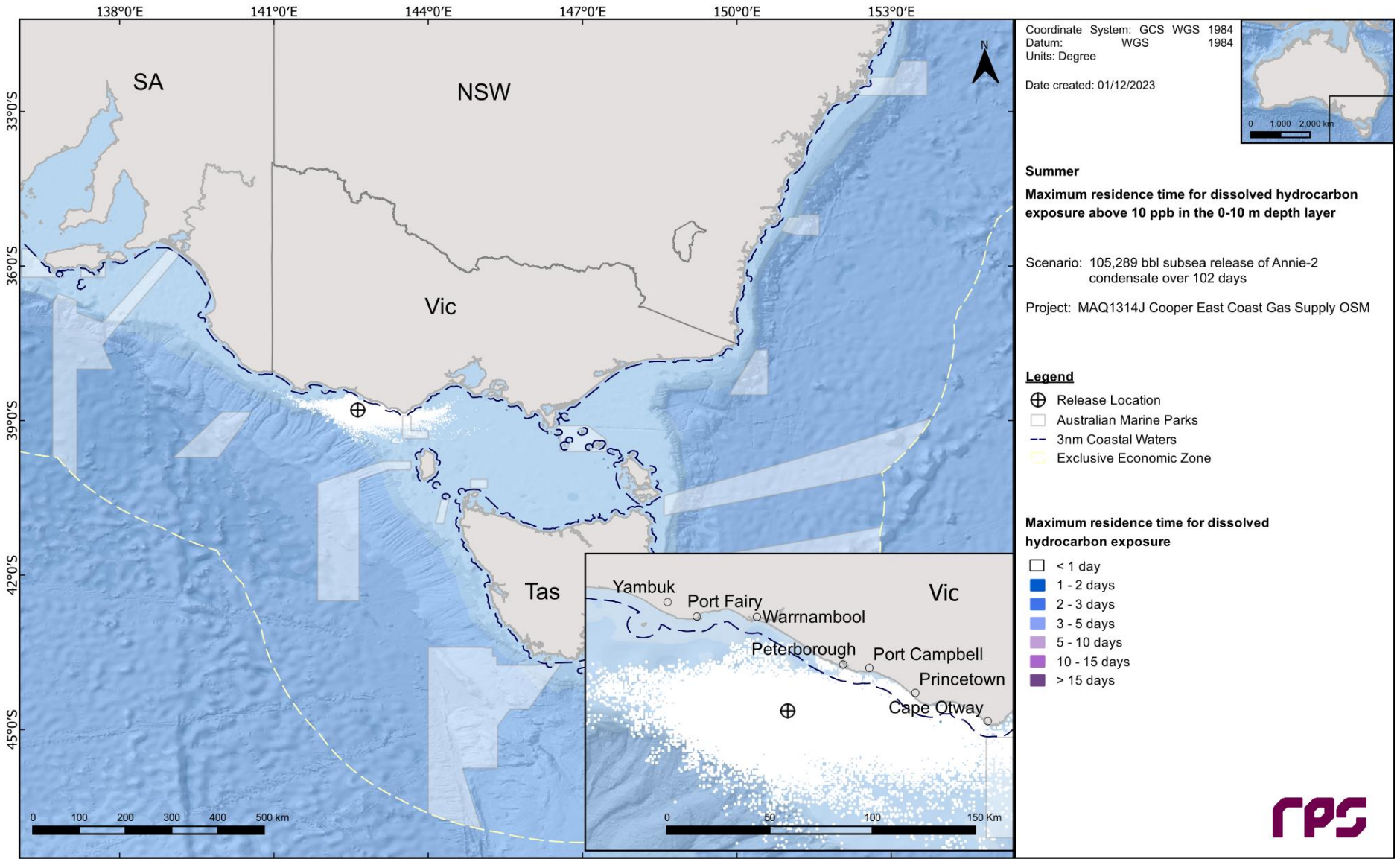

Figure 11.11 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

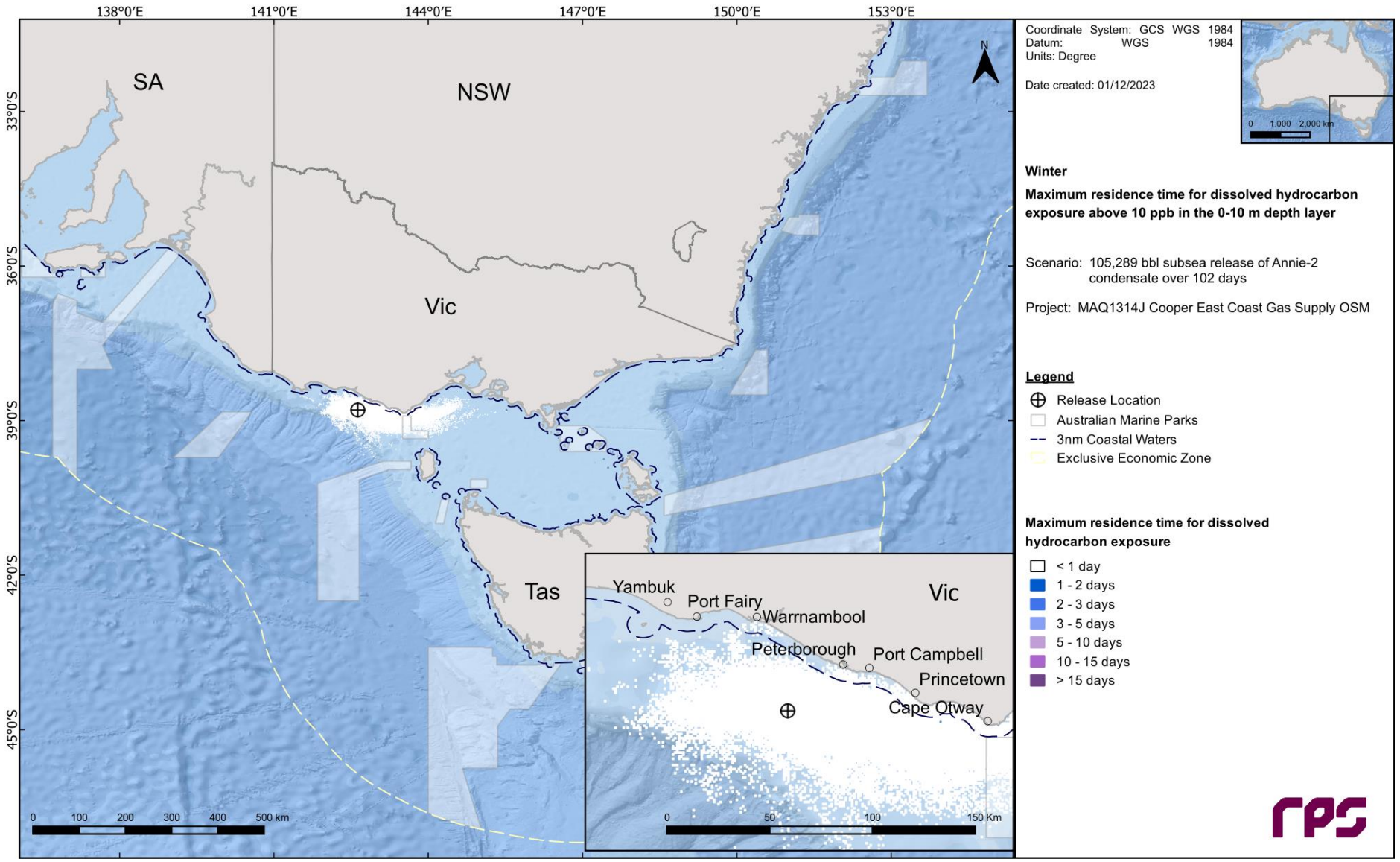

Figure 11.12 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

11.1.3.2 Entrained Hydrocarbons

Table 11.9 summarises the potential in-water exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer.

Except for the receptors the release location is within, during summer the highest probability of low entrained hydrocarbon exposure was 100% recorded for Southern Right Whale - Aggregation. Additional receptors including LGAs, sub-LGAs, and AMPs were predicted with entrained hydrocarbon exposure (refer to Table 11.9).

During winter, several receptors, including the Apollo AMP, Southern Right Whale – Aggregation and White-faced Storm-petrel - Foraging BIAs revealed a 100% probability of low entrained hydrocarbon exposure.

Table 11.10 presents the predicted minimum time to entrained hydrocarbon exposure and maximum residence time for entrained hydrocarbon exposure to individual receptors in the 0-10 m depth layer, for all thresholds assessed.

Figure 11.13 and Figure 11.14 present the zones of potential entrained hydrocarbon exposure for the 0-10 m depth layer for each season whilst Figure 11.15 and Figure 11.18 present the maximum residence time of entrained hydrocarbon exposure for the NOPSEMA thresholds.

Table 11.9 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
AMP	Apollo	281.5	98	36	237.4	100	61
	Beagle	38.4	44	-	45.8	63	-
	East Gippsland	16.7	8	-	17.9	5	-
	Franklin	45.4	16	-	44.8	2	-
	Murray	14.8	3	-	7.2	-	-
	Nelson	22.3	11	-	14.4	2	-
	Zeehan	91.2	61	-	91.9	23	-
BIA	Antipodean Albatross - Foraging*	1,334.9	100	100	1,332.9	100	100
	Australasian Gannet - Foraging	132.1	69	4	92.2	90	-
	Australian Sea Lion - Foraging	32	14	-	11.2	1	-
	Black Petrel - Foraging	28.2	7	-	22.8	10	-
	Black-browed Albatross - Foraging*	1,334.9	100	100	1,332.9	100	100
	Black-faced Cormorant - Foraging	45.2	42	-	39.6	31	-
	Bullers Albatross - Foraging*	1,334.9	100	100	1,332.9	100	100
	Campbell Albatross - Foraging*	1,334.9	100	100	1,332.9	100	100
	Common Diving-petrel - Foraging*	1,334.9	100	100	1,332.9	100	100
	Crested Tern - Breeding	19.9	6	-	20.9	10	-
	Crested Tern - Foraging	20.9	7	-	22.8	10	-
	Flesh-footed Shearwater - Foraging	28.2	7	-	22.8	10	-
	Great-winged Petrel - Foraging	28.2	7	-	17.7	10	-
	Grey Nurse Shark - Foraging	27.4	21	-	23.3	32	-
	Grey Nurse Shark - Migration	45.1	27	-	22.8	36	-
	Humpback Whale - Foraging	45.1	27	-	23.8	36	-
	Indian Yellow-nosed Albatross - Foraging*	1,334.9	100	100	1,332.9	100	100
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	23.9	13	-	24.5	22	-
	Little Penguin - Breeding	20.7	6	-	22.8	10	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Little Penguin - Foraging	42.1	54	-	61.6	79	-
	Northern Giant Petrel - Foraging	28.2	7	-	17.7	10	-
	Pygmy Blue Whale - Distribution*	1,334.9	100	100	1,332.9	100	100
	Pygmy Blue Whale - Foraging*	1,334.9	100	100	1,332.9	100	100
	Pygmy Blue Whale - Foraging annual high use area*	1,334.9	100	100	1,332.9	100	100
	Pygmy Blue Whale - Known Foraging Area	269.7	98	35	210.4	100	60
	Short-tailed Shearwater - Foraging	439.8	100	85	450.3	100	90
	Shy Albatross - Foraging*	1,334.9	100	100	1,332.9	100	100
	Soft-plumaged Petrel - Foraging	25.6	5	-	13.4	1	-
	Sooty Shearwater - Foraging	38.7	19	-	22.8	33	-
	Southern Giant Petrel - Foraging	28.2	7	-	17.7	10	-
	Southern Right Whale – Aggregation	379	100	87	427.8	100	88
	Southern Right Whale - Connecting Habitat	30.8	31	-	33.6	18	-
	Southern Right Whale - Known Core Range*^	1,334.9	100	100	1,332.9	100	100
	Wandering Albatross - Foraging*	1,334.9	100	100	1,332.9	100	100
	Wedge-tailed Shearwater - Foraging*	1,334.9	100	100	1,332.9	100	100
	White Shark - Breeding	33.6	41	-	34.6	60	-
	White Shark - Distribution*	1,334.9	100	100	1,332.9	100	100
	White Shark - Foraging	176.6	78	26	191.6	81	11
	White-capped Albatross - Foraging	28.2	7	-	17.7	10	-
	White-faced Storm-petrel - Breeding	29.9	12	-	22.8	16	-
	White-faced Storm-petrel - Foraging	269.7	97	28	206.6	100	46
	Wilsons Storm Petrel - Migration	28.2	7	-	17.7	10	-
IBRA	Bateman	15.9	6	-	18	10	-
	Bridgewater	76.1	45	-	65.9	23	-
	East Gippsland Lowlands	23.8	13	-	24	32	-
	Flinders	37.2	25	-	35.8	35	-
	Gippsland Plain	66.6	57	-	83.2	70	-
	Glenelg Plain	77.2	56	-	72.3	28	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	King Island	30.8	31	-	31.6	16	-
	Otway Plain	439.8	99	74	450.3	100	83
	Otway Ranges	355.2	99	48	366.6	100	69
	South East Coastal Ranges	10.1	1	-	9	-	-
	Strzelecki Ranges	37.8	52	-	51.8	70	-
	Tasmanian West	12.6	3	-	12.5	1	-
	Warrnambool Plain	460.3	99	62	350.5	100	60
	Wilsons Promontory	101	62	1	90.6	76	-
IMCRA	Batemans Shelf	22.3	9	-	22.8	13	-
	Central Bass Strait	272.4	96	29	218	100	43
	Central Victoria	265.5	98	35	201.1	100	55
	Coorong	25.9	8	-	12	1	-
	Davey	10.9	1	-	2.3	-	-
	Flinders	106.9	62	2	97.4	77	-
	Franklin	25.6	10	-	14.1	2	-
	Otway*	1,334.9	100	100	1,332.9	100	100
	Twofold Shelf	45.1	33	-	34.2	50	-
	Victorian Embayments	41.5	46	-	63.5	58	-
	Victorian Embayments	12.2	6	-	10.7	3	-
KEF	Big Horseshoe Canyon	16.1	6	-	15.5	11	-
	Bonney Coast Upwelling	107.2	64	1	92	53	-
	Canyons on the Eastern Continental Slope	28.2	6	-	11	3	-
	Shelf rocky reefs	18.8	6	-	19.7	10	-
	Upwelling East of Eden	45.1	27	-	27.6	38	-
	West Tasmania Canyons	108.1	77	2	119	44	1
MNP	Bunurong	32.2	45	-	46.1	64	-
	Cape Howe	25.3	14	-	26.2	24	-
	Churchill Island	21.2	20	-	29.9	31	-
	Discovery Bay	51.1	34	-	24.9	18	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Point Addis	74.6	30	-	55.8	68	-
	Point Hicks	18.1	14	-	21.1	33	-
	Port Phillip Heads	41.5	27	-	61.3	56	-
	Twelve Apostles	376.6	100	65	317.3	100	64
	Wilsons Promontory	106.9	60	2	97.4	75	-
MP	Batemans	19.9	6	-	20.9	10	-
	Lower South East	19.6	19	-	9.5	-	-
MS	Beware Reef	9.5	-	-	10.9	1	-
	Mushroom Reef	31.2	44	-	31.2	50	-
NP	Kent Group	17.3	6	-	13.7	2	-
NPS4	Bunurong Marine Park	32.6	46	-	58.1	59	-
	Corner Inlet Marine and Coastal Park	12.2	6	-	10.7	3	-
	Shallow Inlet Marine and Coastal Park	12.1	3	-	8.5	-	-
	Wilsons Promontory Marine Park	68.7	57	-	63.2	70	-
RAMSAR	Corner Inlet	12.2	6	-	10.7	3	-
	Port Phillip Bay Western Shoreline and Bellarine Peninsula	26.6	14	-	26.7	37	-
	Western Port	24.5	20	-	29.9	31	-
RSB	Bell Reef	11.8	8	-	11.5	4	-
	Beware Reef	9.6	-	-	10.9	1	-
	Bravenes Rock	228.6	99	37	208.5	100	51
	Cody Bank	30.7	63	-	41.3	67	-
	Cutter Rock	29.3	31	-	30.5	45	-
	New Zealand Star Bank	21	22	-	22.5	33	-
Nearshore Waters	Anser Island	101	59	1	90.6	72	-
	Bass Coast	38.7	47	-	66.8	64	-
	Bega Valley	21.4	8	-	24	11	-
	Black Pyramid	28	8	-	29.3	2	-
	Circular Head	8.7	-	-	11.2	1	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Colac Otway	439.8	99	74	450.3	100	83
	Corangamite	365.7	99	62	350.5	100	59
	Curtis Island	37.2	21	-	35.8	30	-
	East Gippsland	21.4	13	-	23.8	32	-
	Eurobodalla	9.3	-	-	13	7	-
	French Island	16.9	13	-	19.4	11	-
	Gabo Island	23.8	13	-	23.3	25	-
	Glenelg	76.7	56	-	72.3	28	-
	Glennie Group	96.5	62	-	87.6	76	-
	Grant	27.5	16	-	9	-	-
	Greater Geelong	61.3	26	-	55.5	53	-
	Hogan Island Group	28	25	-	33.7	35	-
	Kanowna Island	101	59	1	87.4	71	-
	Kent Island Group	20.3	6	-	13.7	2	-
	King Island	30.8	32	-	33.9	16	-
	Lady Julia Percy Island	72.9	61	-	70.3	36	-
	Laurence Rocks	65.3	56	-	64.2	28	-
	Moncoeur Islands	34.3	43	-	42.8	58	-
	Montague Island	15.9	6	-	18	10	-
	Mornington Peninsula	63.3	53	-	83.2	69	-
	Moyne	460.3	96	36	310.1	94	40
	Mud Island	19.5	10	-	33.8	31	-
	Norman Island	83.6	59	-	76.9	75	-
	Phillip Island	40.3	49	-	49.6	62	-
	Reid Rock	13.3	4	-	13.1	3	-
	Rodondo Island	49.9	47	-	50.9	65	-
	Seal Islands	17.9	9	-	18.5	30	-
	Shellback Island	51	54	-	49.5	72	-
	Skull Rock	97.1	59	-	87.4	70	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	South Gippsland	99.9	58	-	88.8	74	-
	Surf Coast	69.7	44	-	56.3	67	-
	Warrnambool	150.6	67	6	171.5	47	11
	West Coast	12.6	3	-	12.5	1	-
State Waters	New South Wales	23.9	13	-	24	22	-
	South Australia State Waters	29	19	-	10.6	2	-
	Tasmania State Waters	44.1	42	-	39.6	42	-
	Victoria State Waters*	460.3	100	77	450.3	100	85
Nearshore Waters (Sub-LGA)	Anglesea	69.7	34	-	44.9	59	-
	Apollo Bay	161.9	95	18	159.4	100	25
	Bay of Islands	460.3	96	36	310.1	94	40
	Bega Valley	21.4	8	-	24	11	-
	Cape Conran	10.8	1	-	12.6	5	-
	Cape Howe / Mallacoota	21.4	8	-	23.8	20	-
	Cape Liptrap - Northwest	37.3	55	-	53.7	70	-
	Cape Nelson	76.7	56	-	72.3	28	-
	Cape Otway West	439.8	99	76	450.3	100	84
	Cape Patton	106.2	84	1	117.4	92	5
	Childers Cove	150.6	77	6	171.5	51	11
	Corner Inlet	12.2	6	-	10.7	3	-
	Corringle	10.5	2	-	8.1	-	-
	Croajingolong - East	12.3	5	-	14.4	12	-
	Croajingolong - West	12.4	9	-	14.1	17	-
	Discovery Bay - East	47.1	30	-	18.5	13	-
	Discovery Bay - West	24.1	25	-	11.2	3	-
	Eurobodalla	9.3	-	-	13	7	-
	French Island - East	10.9	4	-	14.1	2	-
	French Island / Crib Point	17	14	-	19.2	12	-
	French Island / San Remo	22.2	32	-	34.5	42	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Kilcunda	38.1	44	-	66.8	57	-
	Lorne	51.4	44	-	55.8	71	-
	Marlo	9.7	-	-	10.8	1	-
	Moonlight Head	365.7	99	62	350.5	100	60
	Mornington Peninsula - South	40.8	52	-	52.1	64	-
	Mornington Peninsula - Southwest	63.3	53	-	83.2	68	-
	Point Hicks	15.6	13	-	19.7	32	-
	Port Campbell	358.7	97	43	301.1	95	39
	Port Fairy	95.3	49	-	94.5	40	-
	Port Phillip - Mornington	12.3	5	-	16.8	16	-
	Port Phillip - Queenscliff	48.5	26	-	52.9	53	-
	Port Phillip - Sorrento Shore	40.4	40	-	79.3	69	-
	Port Phillip Heads	34.6	20	-	39.9	41	-
	Portland Bay - East	40.5	38	-	57.1	22	-
	Portland Bay - West	63.7	37	-	61.1	17	-
	Sydenham Inlet	14.1	7	-	16.1	15	-
	Torquay	66.3	25	-	55.5	57	-
	Venus Bay	38.7	47	-	63.7	64	-
	Waratah Bay	37.8	52	-	51.8	70	-
	Warrnambool	105.4	59	1	110.4	47	1
	Westernport	29.4	41	-	33.4	50	-
	Wilsons Promontory - East	68.3	52	-	59.2	69	-
	Wilsons Promontory - West	99.9	58	-	88.8	74	-

*The release location resides within the receptor boundaries.^ RPS have utilised BIA's for the southern right whale that were delineated within the 2011-2021 Southern Right Whale. The NCV Atlas now includes updated BIA's for SRW, though the recently drafted National Recovery Plan for the southern right whale has not been published. The updated BIA's have not been used in this report.

Table 11.10 Predicted minimum time to entrained hydrocarbon exposure and maximum residence time for entrained hydrocarbon exposure to individual receptors in the 0-10 m depth layer. Results are based on a 105,289 bbl (16,740 m^3) subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
AMP	Apollo	2.42	3.13	34.25	1.04	1.58	5.33	25.54	1
	Beagle	11.42	-	13.63	-	9.67	-	15.75	-
	East Gippsland	70.88	-	0.46	-	39.67	-	0.5	-
	Franklin	32.21	-	2.13	-	18.5	-	2.17	-
	Murray	37.21	-	0.5	-	-	-	-	-
	Nelson	13.67	-	2.92	-	100.92	-	0.63	-
	Zeehan	8.54	-	9.38	-	7.42	-	7.33	-
BIA	Antipodean Albatross - Foraging*	0.04	0.04	85.58	17.54	0.04	0.04	90.96	17.67
	Australasian Gannet - Foraging	2.92	14.29	72.04	0.25	6.71	-	90.96	-
	Australian Sea Lion - Foraging	14.08	-	4.46	-	24.13	-	0.04	-
	Black Petrel - Foraging	46.92	-	2.83	-	41.21	-	2.96	-
	Black-browed Albatross - Foraging*	0.04	0.04	85.58	17.54	0.04	0.04	90.96	17.67
	Black-faced Cormorant - Foraging	13.79	-	7.33	-	7.63	-	8.96	-
	Bullers Albatross - Foraging*	0.04	0.04	85.58	19.83	0.04	0.04	90.96	17.67
	Campbell Albatross - Foraging*	0.04	0.04	85.58	17.54	0.04	0.04	90.96	17.67
	Common Diving-petrel - Foraging*	0.04	0.04	85.83	22.08	0.04	0.04	92.75	22.13
	Crested Tern - Breeding	88.33	-	2.25	-	41.83	-	2.96	-
	Crested Tern - Foraging	47.88	-	2.83	-	41.33	-	2.96	-
	Flesh-footed Shearwater - Foraging	46.92	-	2.83	-	41.21	-	2.96	-
	Great-winged Petrel - Foraging	46.92	-	2.04	-	42.79	-	1.58	-
	Grey Nurse Shark - Foraging	44.29	-	2.75	-	39.92	-	2.54	-
	Grey Nurse Shark - Migration	44.21	-	2.83	-	39.88	-	3.04	-
	Humpback Whale - Foraging	33.04	-	2.83	-	39.63	-	3.04	-
	Indian Yellow-nosed Albatross - Foraging*	0.04	0.04	85.58	17.54	0.04	0.04	90.96	17.67

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	44.00	-	2.96	-	40.46	-	2.96	-
	Little Penguin - Breeding	88.25	-	2.38	-	41.75	-	2.96	-
	Little Penguin - Foraging	14.33	-	18.38	-	7.71	-	39.88	-
	Northern Giant Petrel - Foraging	46.92	-	2.04	-	42.79	-	1.58	-
	Pygmy Blue Whale - Distribution*	0.04	0.04	85.83	22.08	0.04	0.04	92.75	22.13
	Pygmy Blue Whale - Foraging*	0.04	0.04	85.83	22.08	0.04	0.04	92.75	22.13
	Pygmy Blue Whale - Foraging annual high use area*	0.04	0.04	85.83	22.08	0.04	0.04	92.75	22.13
	Pygmy Blue Whale - Known Foraging Area	2.58	3.38	59.42	1.88	1.67	3.38	65.92	3.17
	Short-tailed Shearwater - Foraging	1.46	1.58	83.92	22.08	0.75	1.33	92.75	22.13
	Shy Albatross - Foraging*	0.04	0.04	85.83	22.08	0.04	0.04	92.75	22.13
	Soft-plumaged Petrel - Foraging	28.71	-	3.79	-	103.92	-	0.29	-
	Sooty Shearwater - Foraging	39.54	-	2.83	-	40.08	-	3.04	-
	Southern Giant Petrel - Foraging	46.92	-	2.04	-	42.79	-	1.58	-
	Southern Right Whale – Aggregation	0.54	1.04	72.04	2.92	0.46	0.58	90.96	3.46
	Southern Right Whale - Connecting Habitat	15.67	-	16.88	-	11.21	-	11.38	-
	Southern Right Whale - Known Core Range*^	0.04	0.04	85.83	22.08	0.04	0.04	92.75	22.13
	Wandering Albatross - Foraging*	0.04	0.04	85.58	17.54	0.04	0.04	90.96	17.67
	Wedge-tailed Shearwater - Foraging*	0.04	0.04	85.83	22.08	0.04	0.04	92.75	22.13
	White Shark - Breeding	12.04	-	19.5	-	22.13	-	43.42	-
	White Shark - Distribution*	0.04	0.04	85.58	17.54	0.04	0.04	90.96	17.67
	White Shark - Foraging	2.33	2.46	72.04	1.29	2.67	5.63	90.96	1.08
	White-capped Albatross - Foraging	46.92	-	2.04	-	42.79	-	1.58	-
	White-faced Storm-petrel - Breeding	46.29	-	2.83	-	40.58	-	2.96	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	White-faced Storm-petrel - Foraging	2.83	3.42	58.33	1.88	1.75	5.71	65.92	3.17
	Wilsons Storm Petrel - Migration	46.92	-	2.04	-	42.79	-	1.58	-
IBRA	Bateman	88.50	-	1.71	-	42.08	-	1.79	-
	Bridgewater	12.33	-	57.71	-	15.88	-	24.83	-
	East Gippsland Lowlands	48.17	-	3.17	-	34.38	-	9.58	-
	Flinders	30.92	-	5.25	-	22.67	-	5.29	-
	Gippsland Plain	12.42	-	40.83	-	7.92	-	53.88	-
	Glenelg Plain	5.46	-	60.63	-	11.21	-	27.08	-
	King Island	15.75	-	16.88	-	11.29	-	11.04	-
	Otway Plain	2.50	2.96	83.33	19.5	1.79	3.21	77.75	22.04
	Otway Ranges	2.38	5.33	76.04	10.67	1.50	4.13	91.29	12
	South East Coastal Ranges	99.63	-	0.04	-	-	-	-	-
	Strzelecki Ranges	12.00	-	13.96	-	12.96	-	17.67	-
	Tasmanian West	85.83	-	0.13	-	103.92	-	0.21	-
	Warrnambool Plain	2.33	6.21	85.21	11.83	1.21	4.21	86.17	17.17
	Wilsons Promontory	11.29	88.71	45.79	0.08	7.58	-	73.17	-
IMCRA	Batemans Shelf	46.38	-	2.83	-	40.58	-	2.96	-
	Central Bass Strait	2.58	6.67	27.17	1.42	1.79	5.83	38.58	3.17
	Central Victoria	2.54	3.42	57.00	1.88	1.67	5.67	65.92	1.79
	Coorong	16.5	-	4.46	-	24.13	-	0.08	-
	Davey	40.17	-	0.08	-	-	-	-	-
	Flinders	10.75	56.67	47.33	0.08	6.83	-	73.17	-
	Franklin	26.96	-	3.79	-	19.04	-	0.33	-
	Otway*	0.04	0.04	85.83	22.08	0.04	0.04	92.75	22.13
	Twofold Shelf	12.33	-	5.33	-	19.42	-	14.54	-
	Victorian Embayments	14.71	-	12.33	-	9.92	-	28.92	-
	Victorian Embayments	50.17	-	0.13	-	58.25	-	0.04	-
KEF	Big Horseshoe Canyon	42.58	-	0.67	-	64.00	-	0.67	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Bonney Coast Upwelling	3.29	9.42	72.04	0.04	7.00	-	90.96	-
	Canyons on the Eastern Continental Slope	46.96	-	2.04	-	51.67	-	0.04	-
	Shelf rocky reefs	88.21	-	2.17	-	42.08	-	2.08	-
	Upwelling East of Eden	15.29	-	5.33	-	27.88	-	14.54	-
	West Tasmania Canyons	3.04	11.79	12.17	0.17	9.13	12.83	8.17	0.21
MNP	Bunurong	36.38	-	10.83	-	13.00	-	11.13	-
	Cape Howe	43.96	-	3.25	-	41.5	-	3.25	-
	Churchill Island	37.00	-	5.92	-	29.63	-	18.21	-
	Discovery Bay	14.29	-	22.38	-	15.88	-	10.04	-
	Point Addis	13.46	-	46.25	-	12.29	-	35.54	-
	Point Hicks	65.92	-	2.67	-	34.04	-	14.54	-
	Port Phillip Heads	18.63	-	6.17	-	20.67	-	26.25	-
	Twelve Apostles	2.13	4.08	85.83	11.83	1.33	4.08	78.54	17.46
	Wilsons Promontory	11.29	56.67	47.33	0.08	7.71	-	73.17	-
MP	Batemans	88.33	-	2.25	-	41.83	-	2.96	-
	Lower South East	26.88	-	4.08	-	-	-	-	-
MS	Beware Reef	-	-	-	-	91.75	-	0.04	-
	Mushroom Reef	14.75	-	11.58	-	10.00	-	7.88	-
NP	Kent Group	32.67	-	0.88	-	41.96	-	0.13	-
NPS4	Bunurong Marine Park	41.08	-	11.25	-	12.13	-	14.00	-
	Corner Inlet Marine and Coastal Park	50.17	-	0.13	-	58.25	-	0.04	-
	Shallow Inlet Marine and Coastal Park	40.04	-	0.17	-	-	-	-	-
	Wilsons Promontory Marine Park	12.54	-	41.79	-	8.33	-	54	-
RAMSAR	Corner Inlet	50.17	-	0.13	-	58.25	-	0.04	-
	Port Phillip Bay Western Shoreline and Bellarine Peninsula	24.21	-	6.83	-	20.83	-	14.79	-
	Western Port	30.58	-	9.08	-	29.63	-	18.21	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
RSB	Bell Reef	33.33	-	0.17	-	19.96	-	0.08	-
	Beware Reef	-	-	-	-	89.00	-	0.04	-
	Bravenes Rock	1.96	5.17	75.96	3.88	1.25	6.38	78.79	3.54
	Cody Bank	11.54	-	9.75	-	6.88	-	6.29	-
	Cutter Rock	31.54	-	5.63	-	19.00	-	4.67	-
	New Zealand Star Bank	39.75	-	3.38	-	36.63	-	4.13	-
Nearshore Waters	Anser Island	11.67	88.71	43.5	0.08	7.88	-	73.17	-
	Bass Coast	33.33	-	11.67	-	11.71	-	17.96	-
	Bega Valley	74.83	-	2.54	-	44.54	-	2.42	-
	Black Pyramid	33.75	-	1.58	-	20	-	1.58	-
	Circular Head	-	-	-	-	108.38	-	0.04	-
	Colac Otway	2.5	2.96	83.33	19.5	1.79	3.21	91.13	22.04
	Corangamite	2.25	6.21	85.21	11.83	1.21	4.21	91.29	17.17
	Curtis Island	30.92	-	2.71	-	22.67	-	3.42	-
	East Gippsland	64.63	-	2.67	-	34.38	-	9.58	-
	Eurobodalla	-	-	-	-	46.79	-	0.25	-
	French Island	38.42	-	0.33	-	55.54	-	6.21	-
	Gabo Island	48.17	-	3.42	-	41.71	-	3.17	-
	Glenelg	5.46	-	60.63	-	11.21	-	72.75	-
	Glennie Group	11.54	-	45.79	-	7.63	-	71.92	-
	Grant	22.38	-	6.38	-	-	-	-	-
	Greater Geelong	17.58	-	19.17	-	14.00	-	44.04	-
	Hogan Island Group	31.83	-	5.25	-	23.42	-	5.29	-
	Kanowna Island	11.38	88.71	43.25	0.04	7.88	-	70.71	-
	Kent Island Group	32.38	-	1.17	-	41.96	-	0.13	-
	King Island	15.75	-	16.88	-	11.29	-	11.04	-
	Lady Julia Percy Island	8.00	-	53.25	-	9.33	-	84.88	-
	Laurence Rocks	8.71	-	60.75	-	10.46	-	27.29	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Moncoeur Islands	11.58	-	13.04	-	9.75	-	7.83	-
	Montague Island	88.5	-	1.71	-	42.08	-	1.79	-
	Mornington Peninsula	14.33	-	20	-	9.50	-	36.54	-
	Moyne	2.38	6.25	50.21	10.79	1.46	6.67	68.63	7.92
	Mud Island	42.17	-	5.71	-	41.17	-	13.25	-
	Norman Island	12.00	-	41.83	-	7.58	-	67.71	-
	Phillip Island	14.67	-	15.13	-	9.88	-	33.58	-
	Reid Rock	30.00	-	0.42	-	24.33	-	0.13	-
	Rodondo Island	11.33	-	19.58	-	9.46	-	28.04	-
	Seal Islands	48.29	-	0.54	-	28.25	-	1.33	-
	Shellback Island	12.29	-	36.42	-	9.79	-	52.04	-
	Skull Rock	11.29	-	43.25	-	7.88	-	70.71	-
	South Gippsland	11.63	-	44.21	-	7.92	-	73.17	-
	Surf Coast	8.92	-	55.38	-	12.13	-	39.83	-
	Warrnambool	8.33	49	56.42	1.13	4.00	6.54	86.17	1.5
	West Coast	85.83	-	0.13	-	103.92	-	0.21	-
State Waters	New South Wales	44.42	-	2.75	-	41.83	-	2.96	-
	South Australia State Waters	20.42	-	6.38	-	19.63	-	0.04	-
	Tasmania State Waters	14.79	-	17.63	-	7.71	-	11.71	-
	Victoria State Waters*	1.50	2.58	85.83	22.08	0.83	3	92.75	22.13
Nearshore Waters (Sub-LGA)	Anglesea	15.00	-	40.5	-	12.46	-	39.83	-
	Apollo Bay	3.42	3.92	59.79	1.25	2.25	20	65.92	0.88
	Bay of Islands	2.38	6.25	39.25	10.79	1.46	6.67	39.29	7.92
	Bega Valley	74.83	-	2.54	-	44.54	-	2.42	-
	Cape Conran	114.29	-	0.04	-	48.63	-	0.13	-
	Cape Howe / Mallacoota	70.29	-	2.67	-	41.75	-	2.75	-
	Cape Liptrap - Northwest	16.29	-	13.38	-	12.75	-	22.33	-
	Cape Nelson	5.46	-	60.63	-	11.13	-	27.13	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Cape Otway West	2.46	2.96	83.54	22.04	1.79	3.21	91.13	22.08
	Cape Patton	4.83	48.21	46	0.04	5.25	21.79	63.04	0.08
	Childers Cove	8.33	48.96	46.96	1.13	4.33	5	46.92	1.5
	Corner Inlet	50.17	-	0.13	-	58.25	-	0.04	-
	Corringle	64.63	-	0.04	-	-	-	-	-
	Croajingolong - East	81.83	-	0.17	-	48.5	-	0.63	-
	Croajingolong - West	67.00	-	0.25	-	45.17	-	0.46	-
	Discovery Bay - East	16.88	-	24.29	-	18.42	-	6.17	-
	Discovery Bay - West	21.79	-	4.38	-	95.96	-	0.04	-
	Eurobodalla	-	-	-	-	46.79	-	0.25	-
	French Island - East	76.5	-	0.04	-	64.96	-	0.54	-
	French Island / Crib Point	38.38	-	0.29	-	55.54	-	2	-
	French Island / San Remo	33.38	-	8.54	-	11.79	-	16.38	-
	Kilcunda	33.33	-	11.04	-	11.71	-	17.96	-
	Lorne	8.38	-	22.92	-	10.42	-	37.25	-
	Marlo	-	-	-	-	81.08	-	0.04	-
	Moonlight Head	2.33	6.21	76.5	10.29	1.46	4.21	91.29	17.17
	Mornington Peninsula - South	14.33	-	18.83	-	9.5	-	23.58	-
	Mornington Peninsula - Southwest	14.33	-	20	-	9.5	-	30.42	-
	Point Hicks	66.08	-	2.25	-	34.25	-	9.58	-
	Port Campbell	2.25	6.38	85.21	11.83	1.21	7.08	76.08	7.67
	Port Fairy	7.83	-	49.67	-	14.00	-	68.63	-
	Port Phillip - Mornington	55.21	-	0.54	-	47.29	-	3.63	-
	Port Phillip - Queenscliff	18.08	-	16	-	19.63	-	26.38	-
	Port Phillip - Sorrento Shore	15.96	-	9.29	-	11.17	-	37.13	-
	Port Phillip Heads	18.75	-	4.92	-	20.71	-	20.96	-
	Portland Bay - East	11.67	-	40.33	-	15.25	-	68.58	-
	Portland Bay - West	12.21	-	50.92	-	19.71	-	72.75	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Sydenham Inlet	66.46	-	0.42	-	46.83	-	1.75	-
	Torquay	15.04	-	55.38	-	13.00	-	36.21	-
	Venus Bay	34.38	-	11.67	-	11.88	-	17.42	-
	Waratah Bay	12.00	-	25.63	-	12.96	-	17.67	-
	Warrnambool	8.42	64.13	56.42	0.04	4.00	10.42	86.17	0.13
	Westernport	14.75	-	11.42	-	9.96	-	7.88	-
	Wilsons Promontory - East	11.79	-	35.5	-	11.50	-	57.46	-
	Wilsons Promontory - West	11.63	-	44.21	-	7.92	-	73.17	-

*The release location resides within the receptor boundaries. ^ RPS have utilised BIA's for the southern right whale that were delineated within the 2011-2021 Southern Right Whale. The NCV Atlas now includes updated BIA's for SRW, though the recently drafted National Recovery Plan for the southern right whale has not been published. The updated BIA's have not been used in this report.

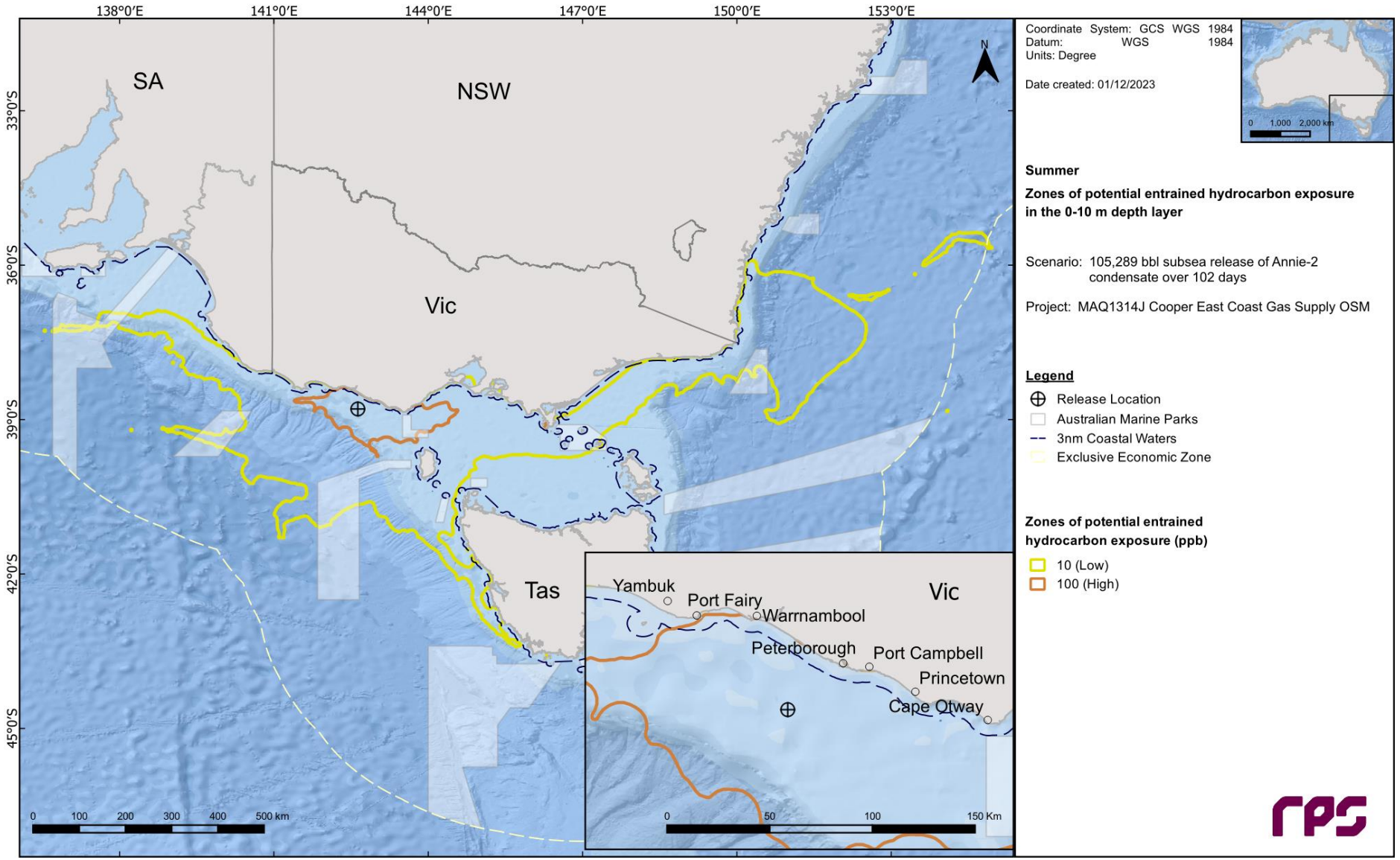

Figure 11.13 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

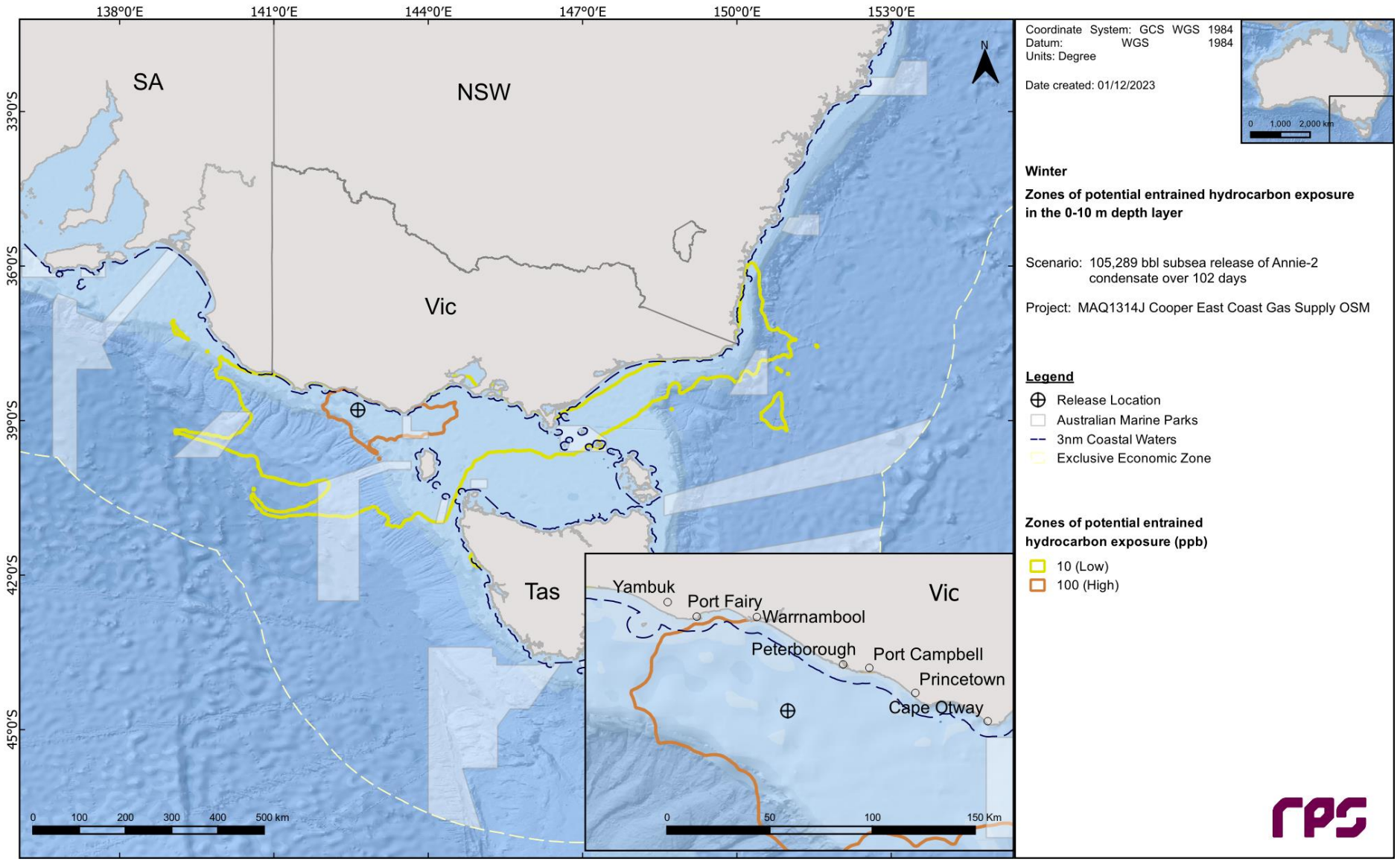

Figure 11.14 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

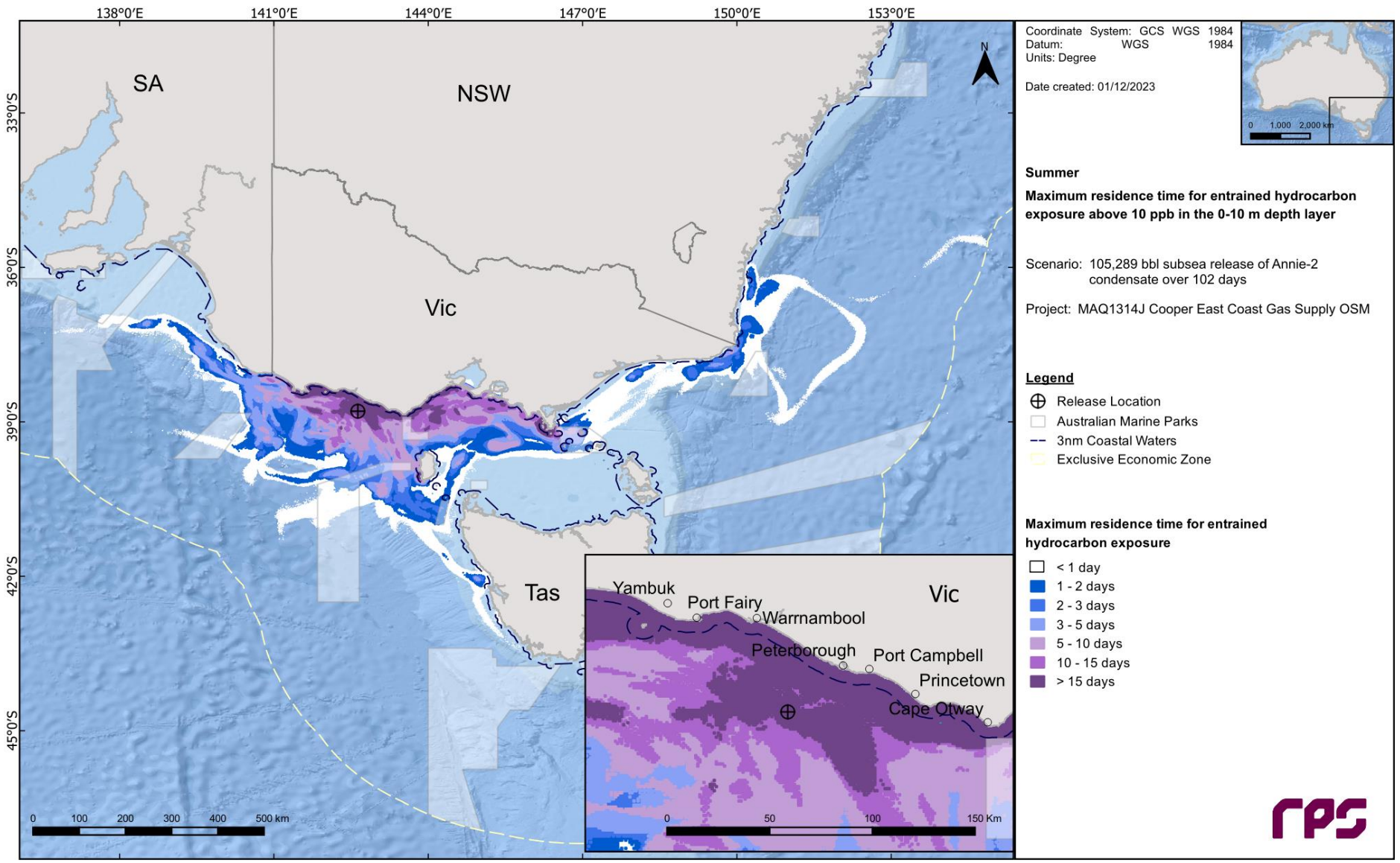

Figure 11.15 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

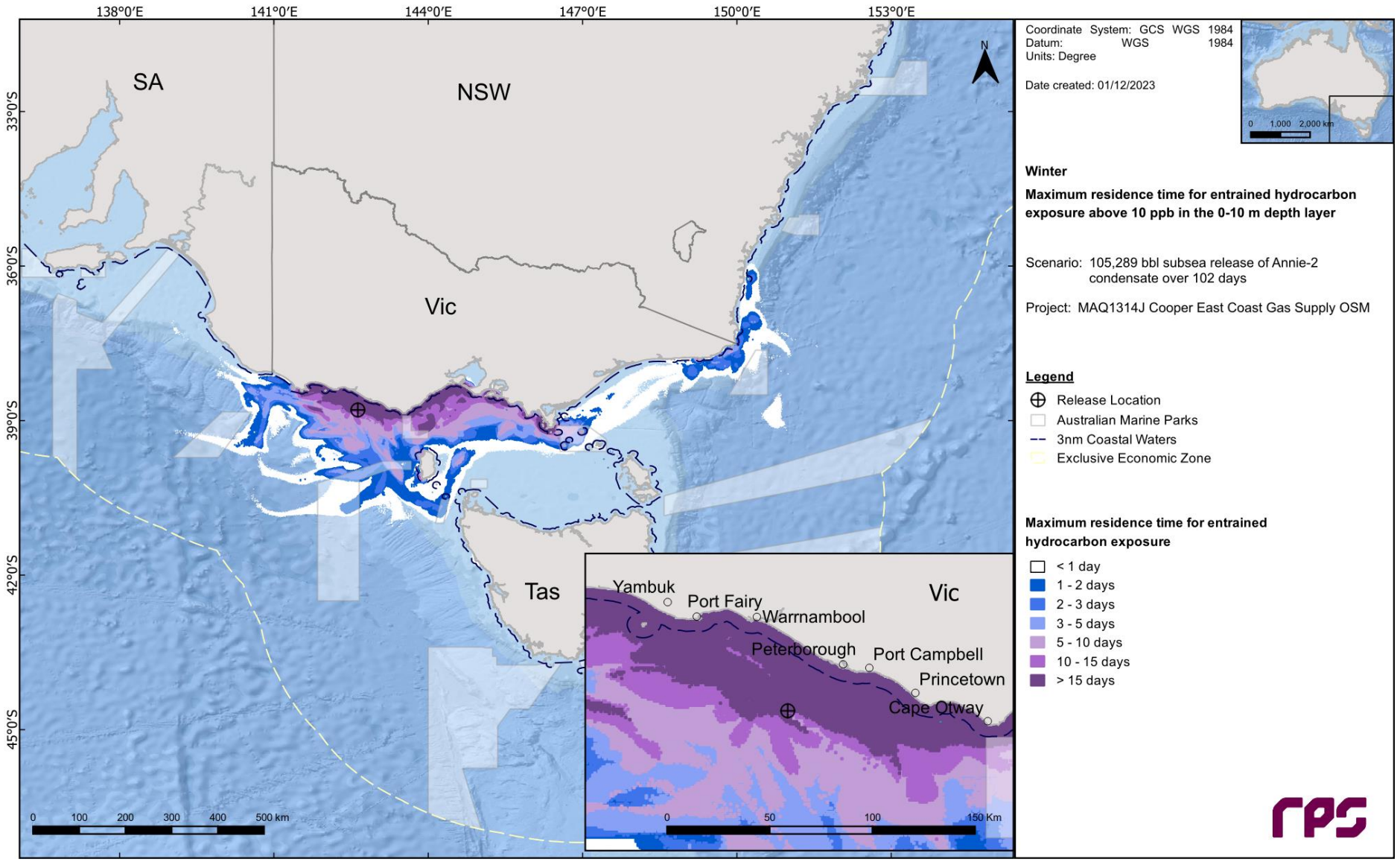

Figure 11.16 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

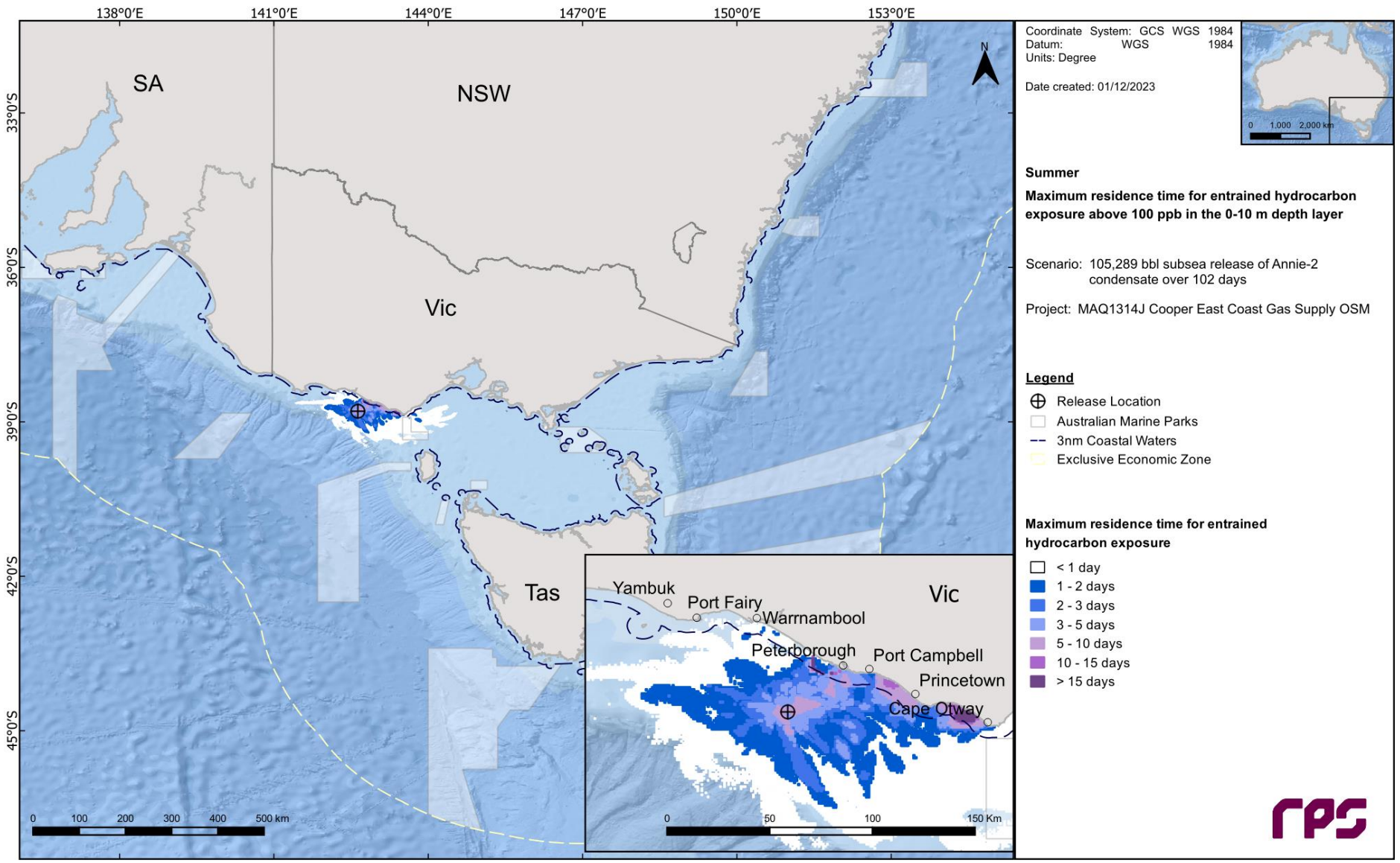

Figure 11.17 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during summer conditions.

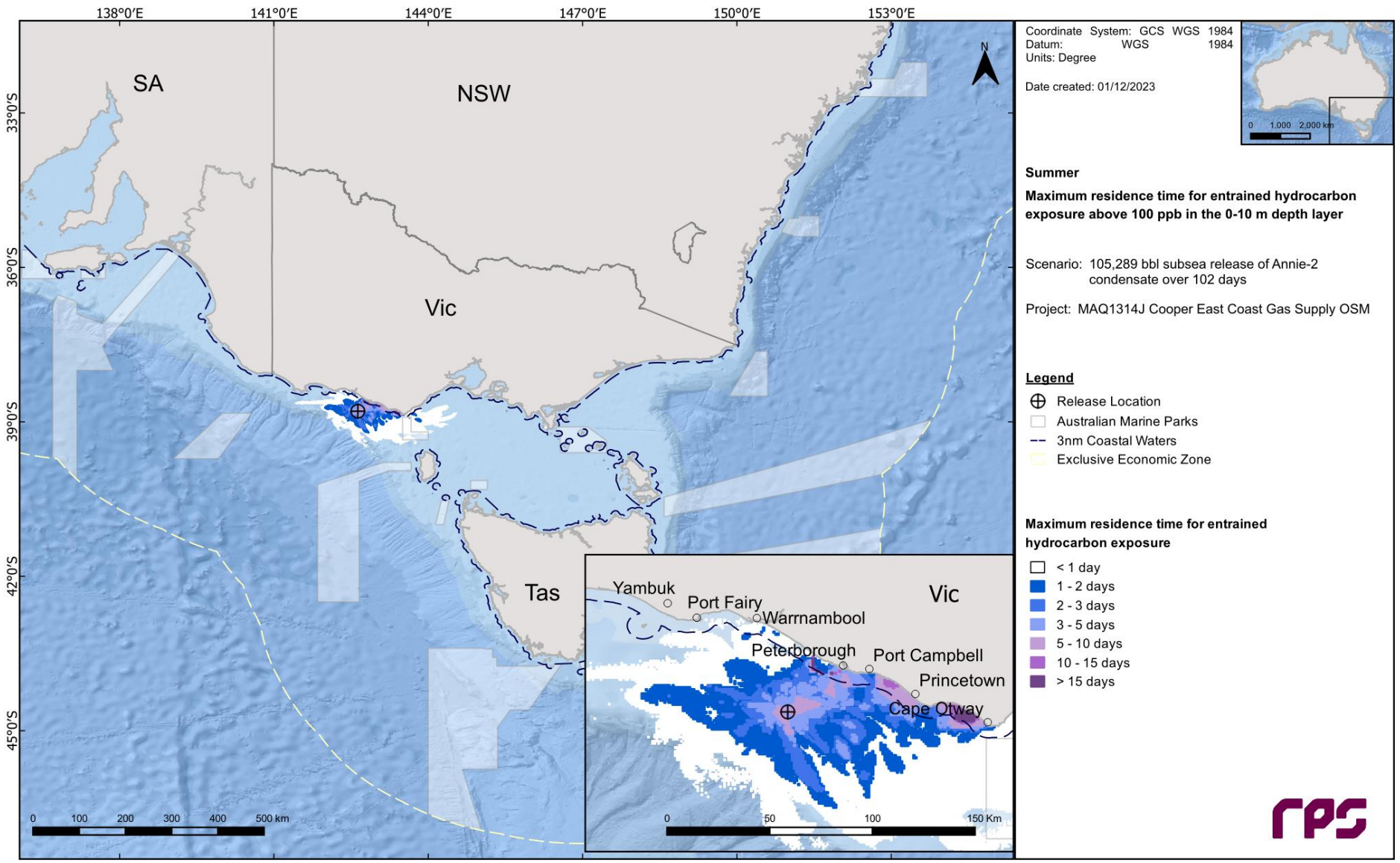

Figure 11.18 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea in the event of a 105,289 bbl subsurface release from a loss of well control at Elanora-1 ST1 (Isabella) over 102 days. The results were calculated from 100 spill simulations during winter conditions.

11.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below for the following criteria:

a. Largest swept area for surface oil above 10 g/m^2;
b. Largest (total) volume of oil ashore;
c. Longest length of shoreline with oil accumulation above 100 g/m$^{2;}$
d. Largest area of entrained hydrocarbon exposure above 100 ppb; and
e. Largest area of dissolved hydrocarbon exposure above 50 ppb.

Table 11.11 presents a summary of sea surface and in-water exposure and shoreline accumulation at the assessed thresholds for the identified deterministic simulations.

Table 11.11 Summary of the worst-case deterministic analysis based on the scenario presented in the stochastic analysis section.

Variable	Threshold	Deterministic Analysis Criteria				
		Largest swept area of floating oil >10 g/m²	Largest volume of oil ashore	Longest length of shoreline with accumulation >100 g/m²	Largest area of entrained hydrocarbon exposure >100 ppb	Largest area of dissolved hydrocarbon exposure >50 ppb
Season		Summer	Winter	Winter	Summer	Summer
Run Number		5	92	17	44	29
Total area of floating Oil exposure (km²)	1 g/m²	360	251	293	276	341
	10 g/m²	**40**	7	5	16	9
	50 g/m²	-	-	-	-	-
Total length of shoreline accumulation (km)	10 g/m²	166	189	268	34	158
	100 g/m²	15	43	**44**	5	12
	1,000 g/m²	-	0	**-**	-	-
Minimum time before accumulation on any shoreline (hours)	10 g/m²	335	44	269	1035	366
	100 g/m²	994	296	619	1073	436
	1,000 g/m²	-	-	**-**	-	**-**
Total volume of oil ashore (m³)		82	**212**	189	22	74
Total area of entrained hydrocarbon exposure (km²)	10 ppb	49,508	24,945	24,641	60,183	48,694
	100 ppb	5,196	5,084	3,596	**6,272**	5,835
Total area of dissolved hydrocarbon exposure (km²)	10 ppb	141	413	400	273	319
	50 ppb	-	-	-	-	**1**
	400 ppb	-	-	-	-	-
Start Date		3rd April 2018 5 am	1st August 2010 1 am	24th September 2013 7 pm	4th January 2018 10 am	12th March 2015 2 pm

NC = No contact at, or above the specified shoreline accumulation threshold.

11.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m^2 was identified as summer run number 5, which started on 3rd April 2018.

Figure 11.19 illustrates the floating oil exposure and shoreline accumulation over the 116-day simulation.

Figure 11.20 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 116-day simulation.

Figure 11.21 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.12 summarises the mass balance peaks and at the end of the simulation.

Table 11.12 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 10 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	260.3	26.8	6.4
Entrained (m^3)	2,515.2	96.7	2,002.1
Dissolved (m^3)	8.9	33.8	0.5
Evaporation (m^3)	9,881.7	116.0	9,881.7
Decay (m^3)	4,047.6	116.0	4,047.6
Ashore (m^3)	84.7	101.0	82.0

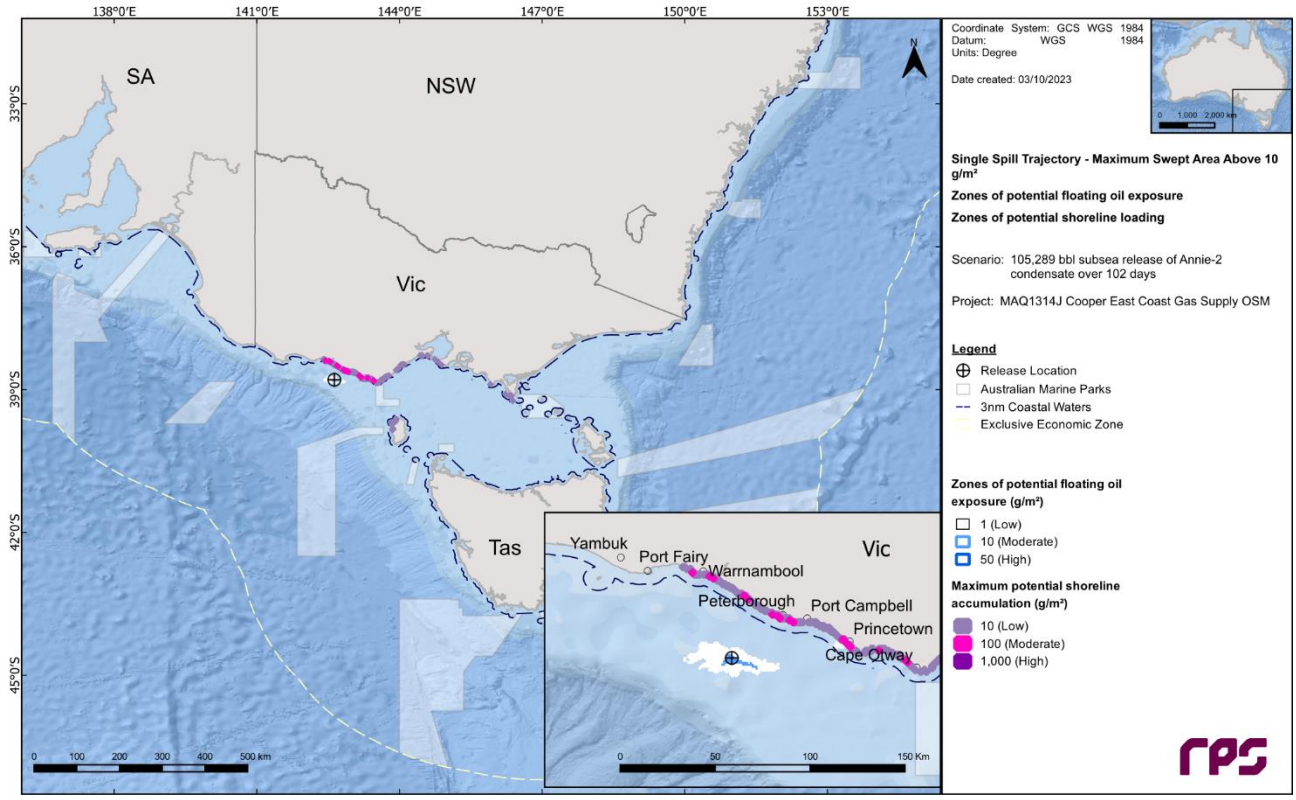

Figure 11.19 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 10 g/m^2.

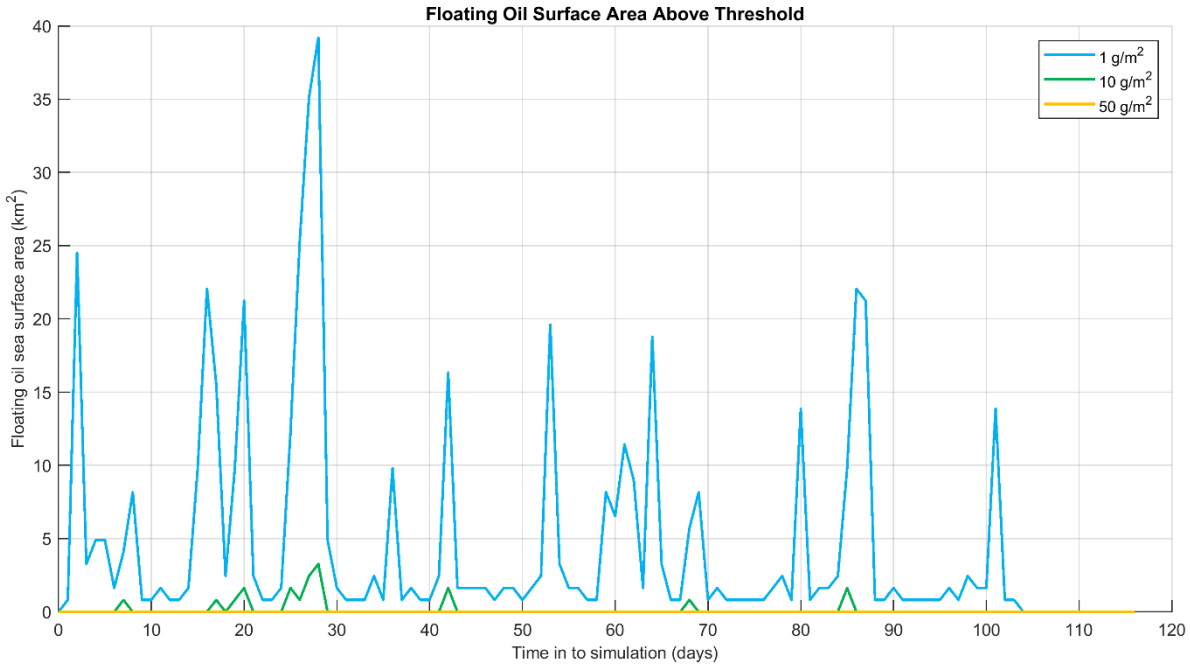

Figure 11.20 Time series of the sea surface exposure above each threshold for the trajectory with the largest swept area of floating oil above 10 g/m^2.

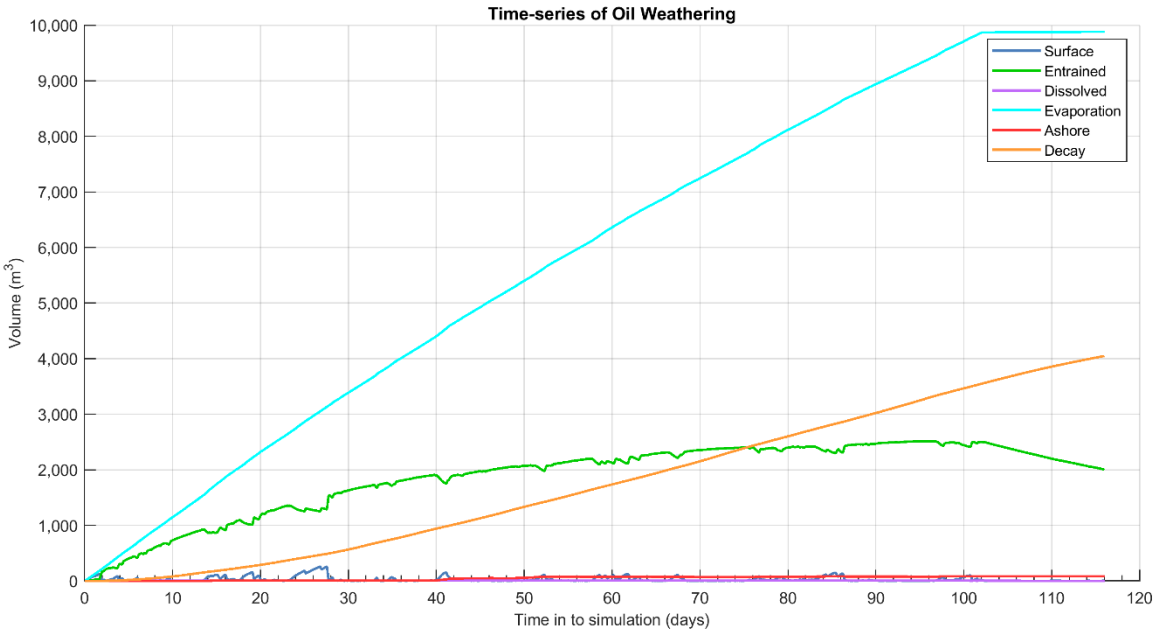

Figure 11.21 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m^2.

11.2.2 Deterministic Case: Largest volume of oil ashore

The deterministic trajectory that resulted in the largest volume of oil ashore was identified as winter run number 92, which started on 1st August 2010.

Figure 11.22 illustrates the floating oil exposure and shoreline accumulation over the 116-day simulation.

Figure 11.23 displays the time series of the shoreline accumulation above the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds over the 116-day simulation.

Figure 11.24 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.13 summarises the mass balance peaks and at the end of the simulation.

Table 11.13 Summary of the mass balance for the trajectory with the largest volume of oil ashore.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	194.2	28.4	0.8
Entrained (m^3)	2,506.9	99.3	1,990.3
Dissolved (m^3)	10.1	24.8	0.7
Evaporation (m^3)	9,748.3	116.0	9,748.3
Decay (m^3)	4,070.4	116.0	4,070.4
Ashore (m^3)	211.7	111.1	209.8

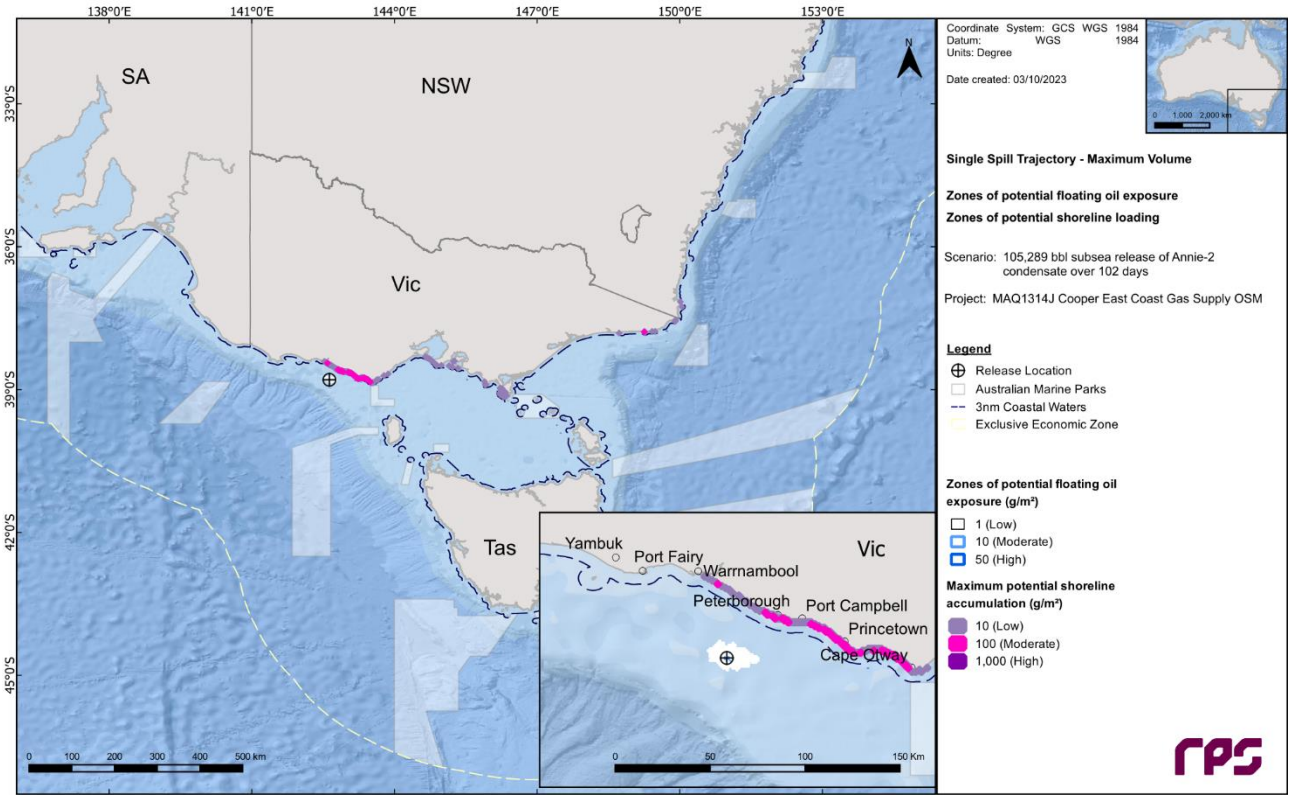

Figure 11.22 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume of oil ashore.

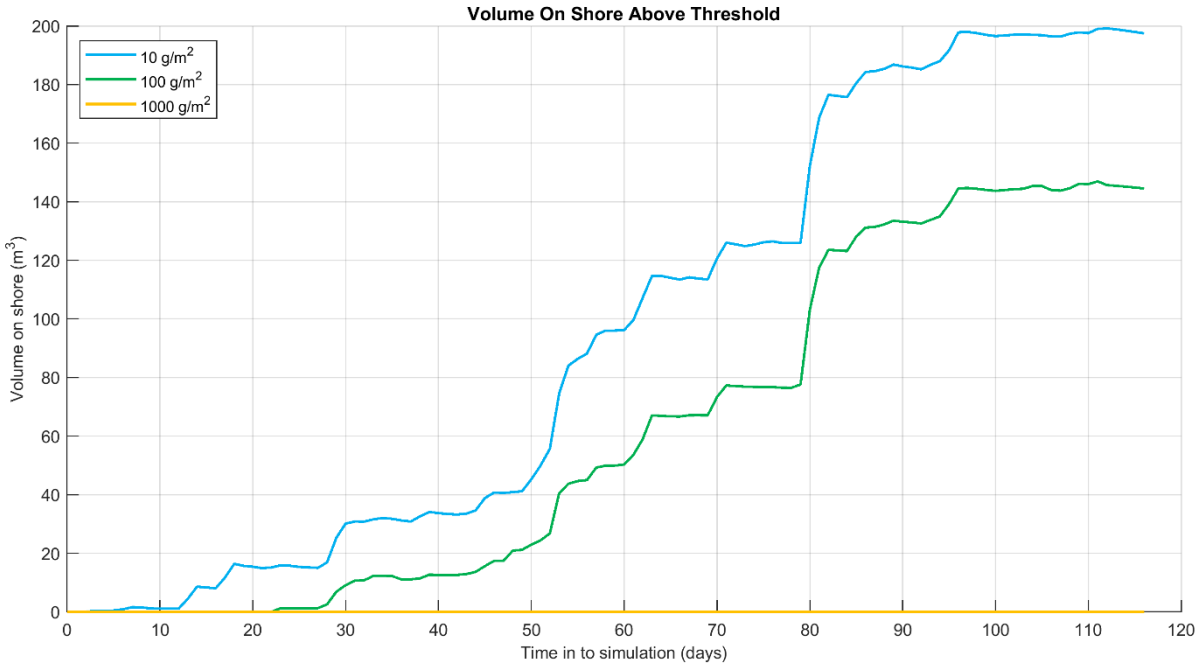

Figure 11.23 Time series of oil accumulation on the shoreline above each threshold for the trajectory with the largest volume of oil ashore.

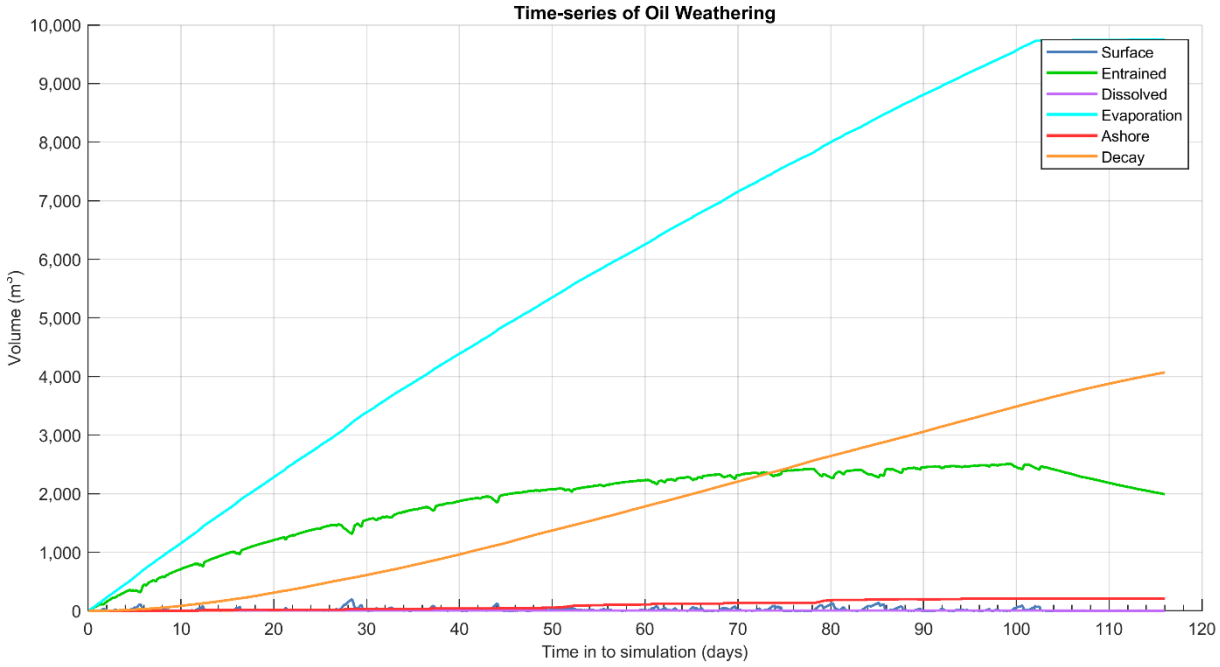

Figure 11.24 Predicted weathering and fates graph for the trajectory with the largest volume of oil ashore.

11.2.3 Deterministic Case: Longest length of shoreline with accumulation above 100 g/m^2

The deterministic trajectory that resulted in the longest length of shoreline with accumulation above 100 g/m^2 was identified as winter run number 17, which started on 24th September 2013.

Figure 11.25 illustrates the floating oil exposure and shoreline accumulation over the 116-day simulation.

Figure 11.26 displays the time series of the length of shoreline with accumulation at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds over the 116-day simulation.

Figure 11.27 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.14 summarises the mass balance peaks and at the end of the simulation.

Table 11.14 Summary of the mass balance for the trajectory with the longest length of shoreline with accumulation above 100 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	192.1	37.9	0.1
Entrained (m^3)	2,556.1	102.0	2,026.8
Dissolved (m^3)	10.2	21.7	0.5
Evaporation (m^3)	9,776.3	116.0	9,776.3
Decay (m^3)	4,027.9	116.0	4,027.9
Ashore (m^3)	190.0	112.7	188.6

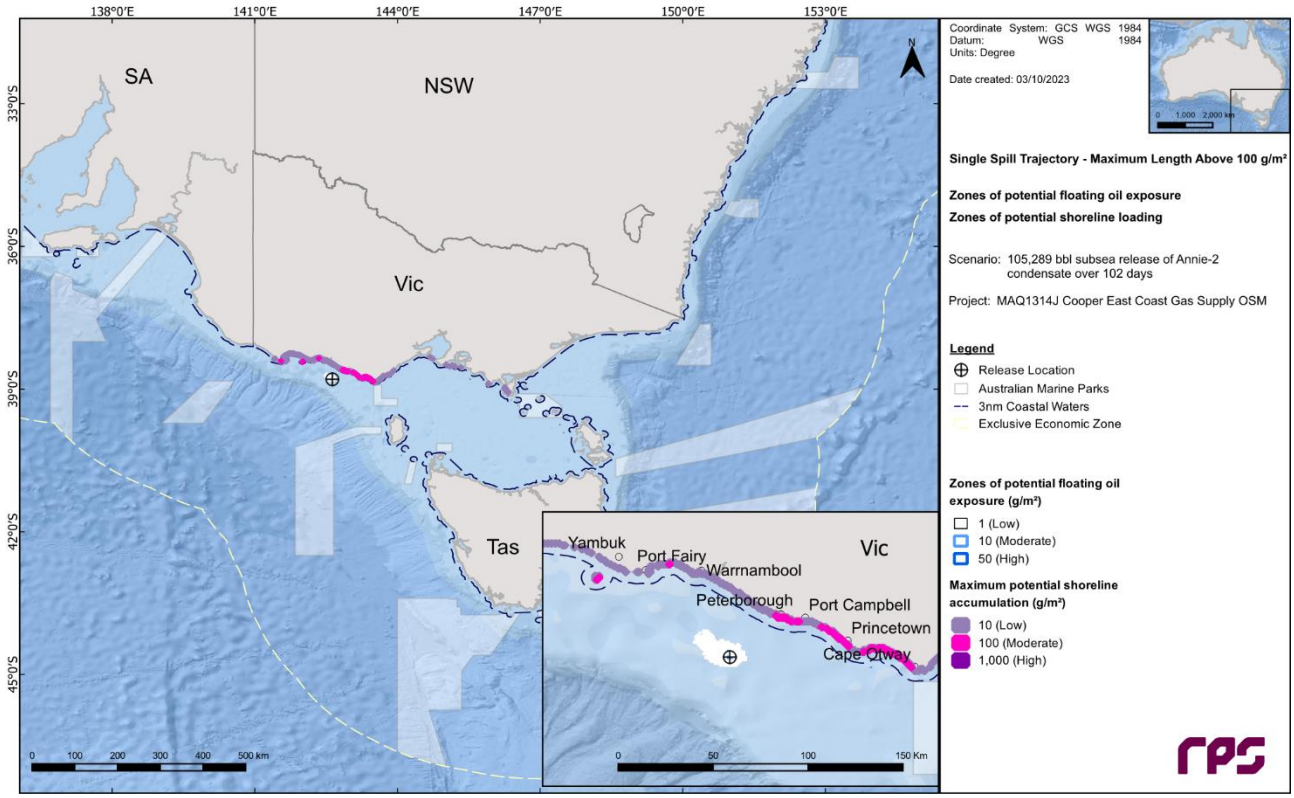

Figure 11.25 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the longest length of shoreline with accumulation above 100 g/m^2.

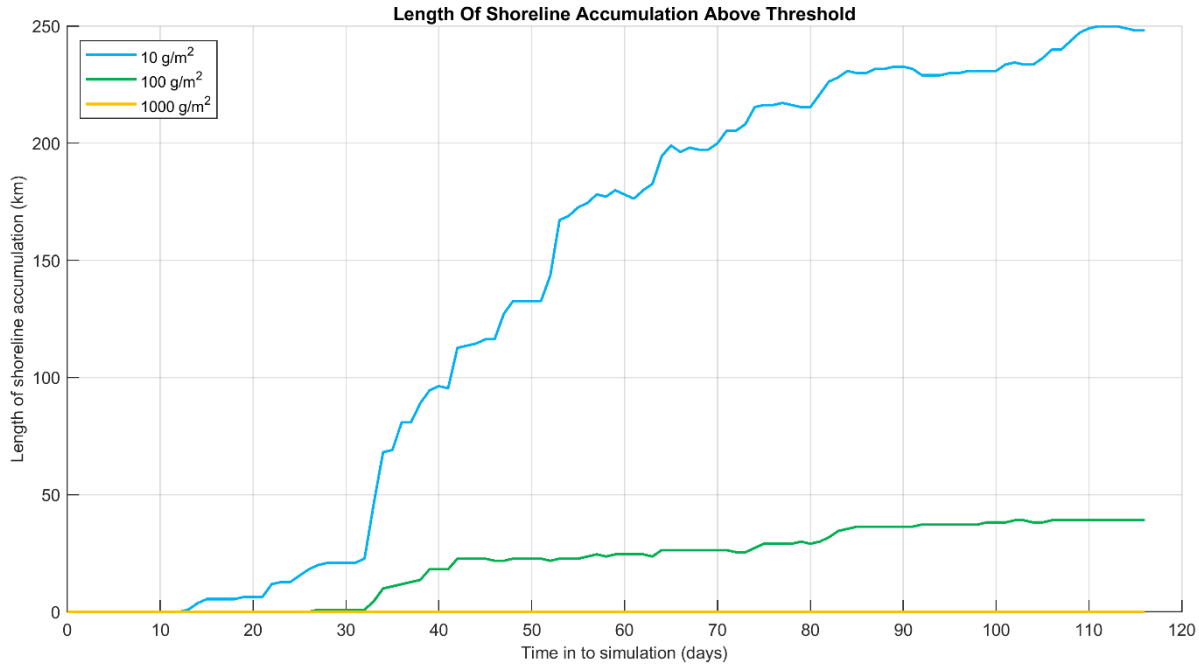

Figure 11.26 Time series of the length of shoreline with accumulation above each threshold for the trajectory with the longest length of shoreline with accumulation above 100 g/m².

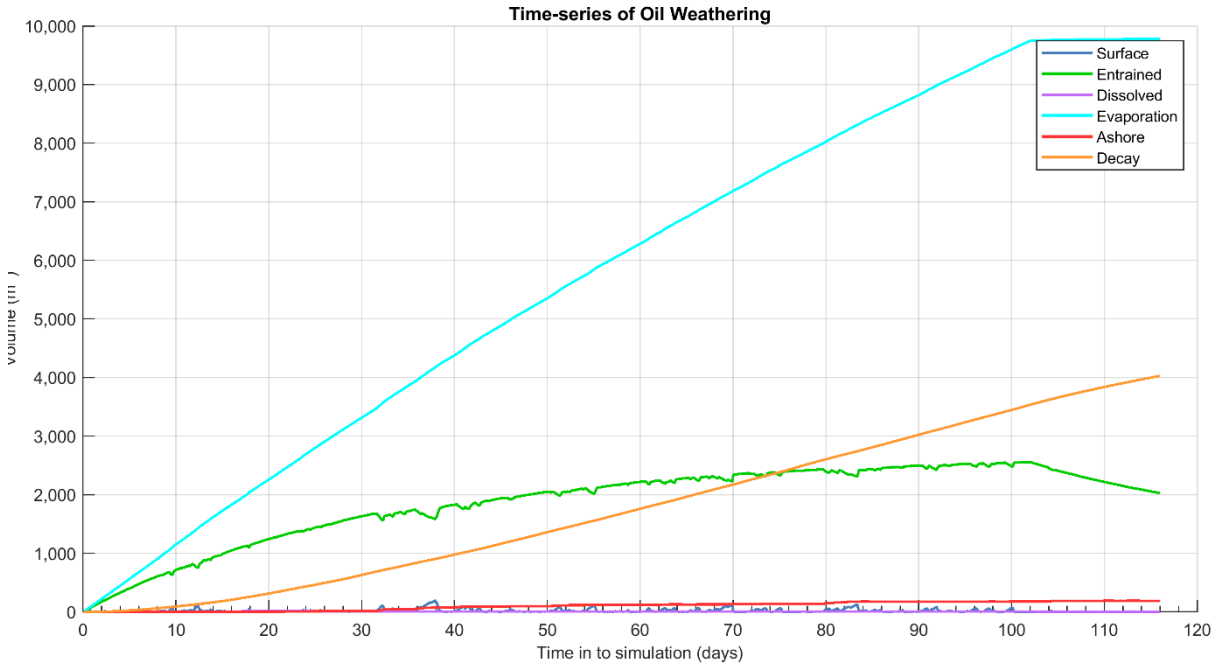

Figure 11.27 Predicted weathering and fates graph for the trajectory with the longest length of shoreline with accumulation above 100 g/m².

11.2.4 Deterministic Case: Largest area of entrained hydrocarbon exposure above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbon exposure above 100 ppb was identified as summer run number 44, which started on 4th January 2018.

Figure 11.28 illustrates the zones of potential entrained hydrocarbon exposure over the 116-day simulation.

Figure 11.29 displays the time series of the area of entrained hydrocarbon exposure at the low (10 ppb) and high (100 ppb) thresholds over the 116-day simulation.

Figure 11.30 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.15 summarises the mass balance peaks and at the end of the simulation.

Table 11.15 Summary of the mass balance for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	183.0	19.8	2.2
Entrained (m^3)	2,654.6	100.1	2,087.2
Dissolved (m^3)	9.7	29.7	0.5
Evaporation (m^3)	9,778.9	116.0	9,778.9
Decay (m^3)	4,130.0	116.0	4,130.0
Ashore (m^3)	21.8	105.5	21.5

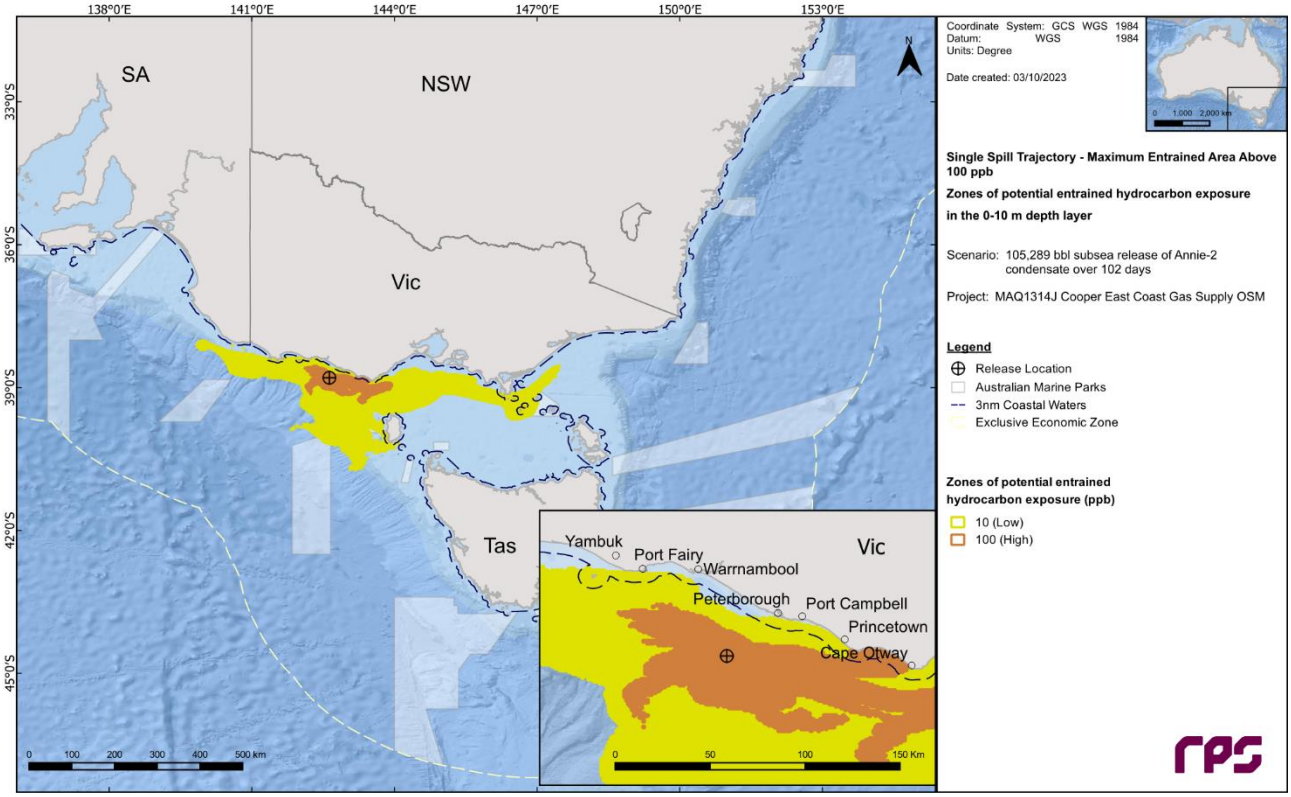

Figure 11.28 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

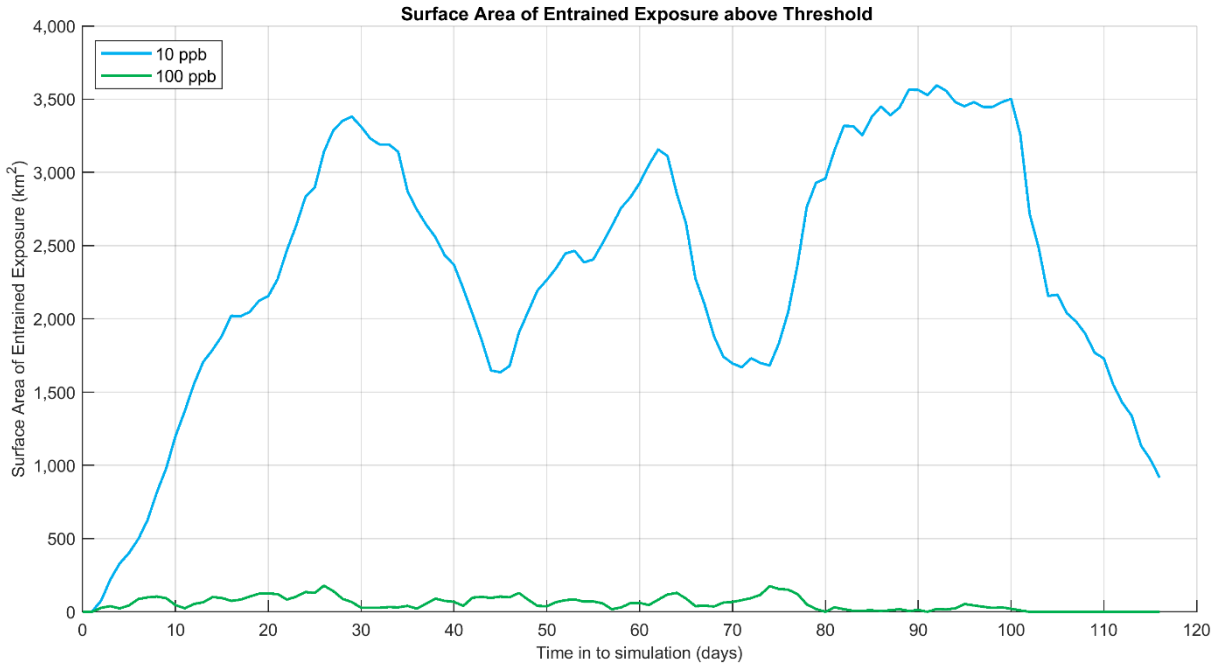

Figure 11.29 Time series of the entrained hydrocarbon exposure area above each threshold for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

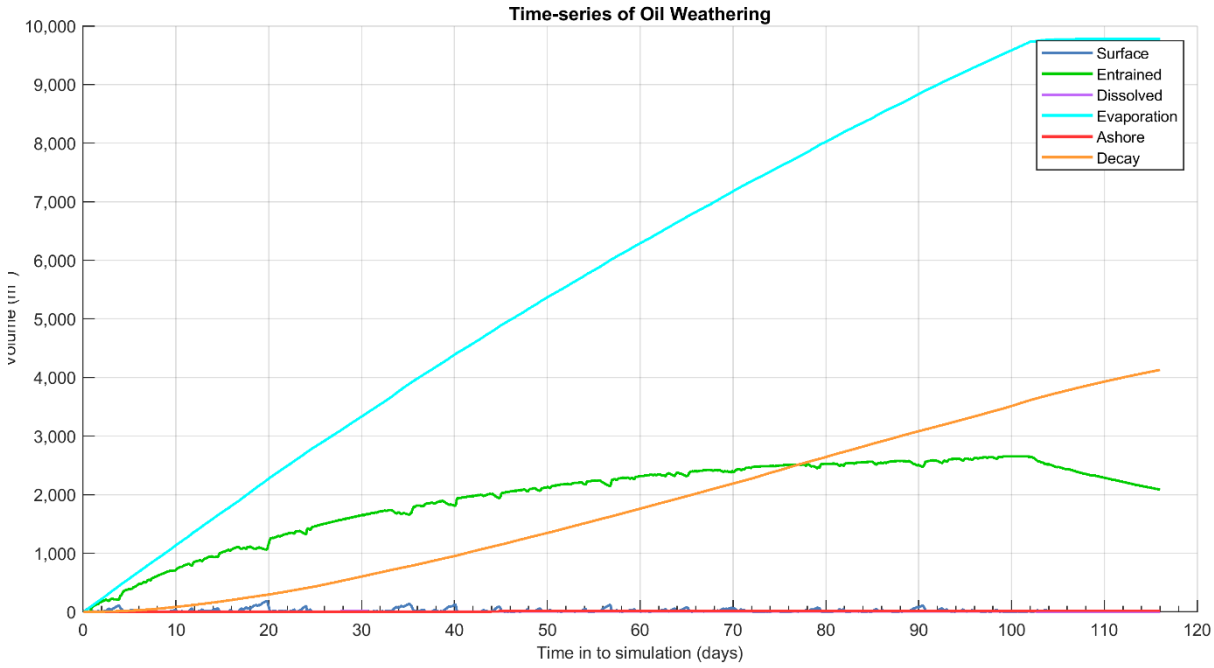

Figure 11.30 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

11.2.5 Deterministic Case: Largest area of dissolved hydrocarbon exposure above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 50 ppb was identified as summer run number 29, which started on 12th March 2015.

Figure 11.31 illustrates the zones of potential dissolved hydrocarbon exposure over the 116-day simulation.

Figure 11.32 displays the time series of the area of dissolved hydrocarbon exposure at the low (10 ppb), moderate (50 ppb) and high (400 ppb) thresholds over the 116-day simulation.

Figure 11.33 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.16 summarises the mass balance peaks and at the end of the simulation.

Table 11.16 Summary of the mass balance for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	155.8	65.1	0.4
Entrained (m^3)	2,557.9	102.0	2,041.7
Dissolved (m^3)	9.0	22.1	0.6
Evaporation (m^3)	9,827.6	116.0	9,827.6
Decay (m^3)	4,076.3	116.0	4,076.3
Ashore (m^3)	76.6	93.8	73.8

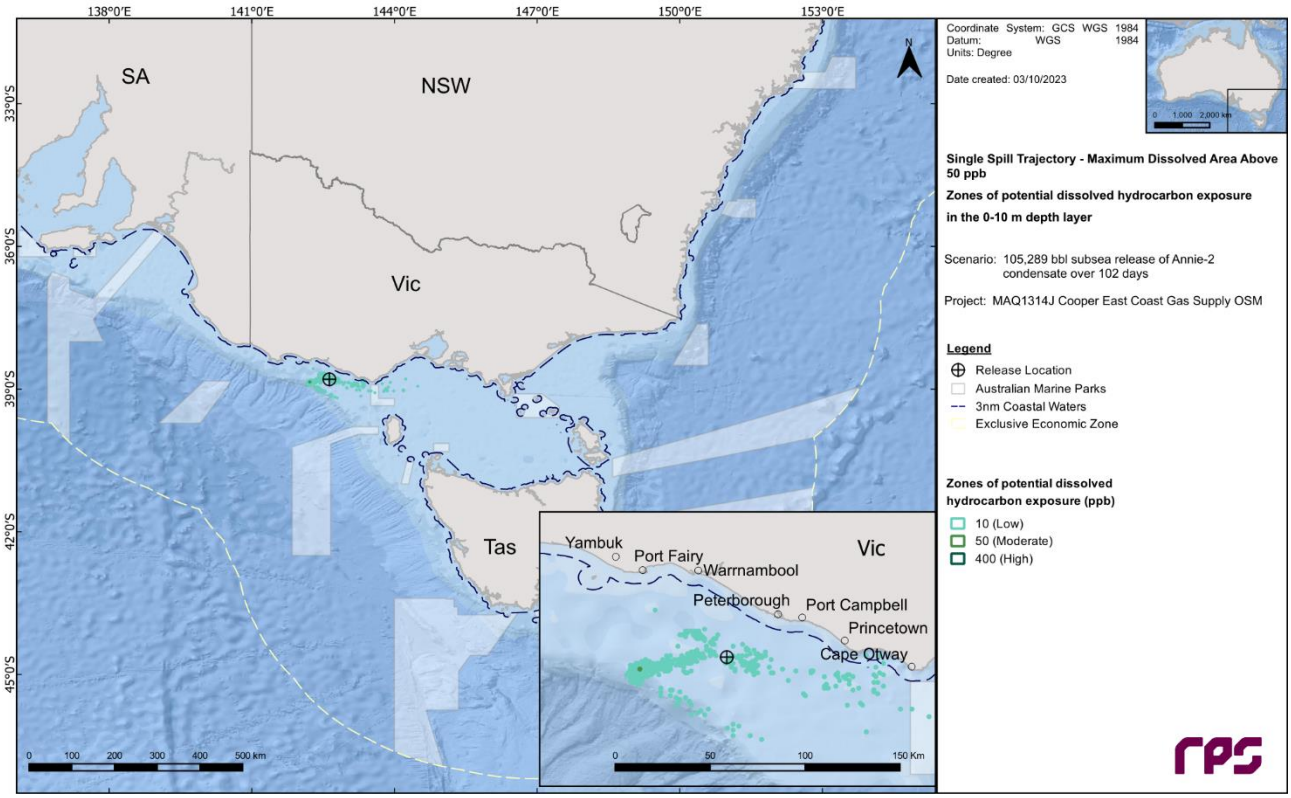

Figure 11.31 Zones of potential dissolved hydrocarbon exposure, for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

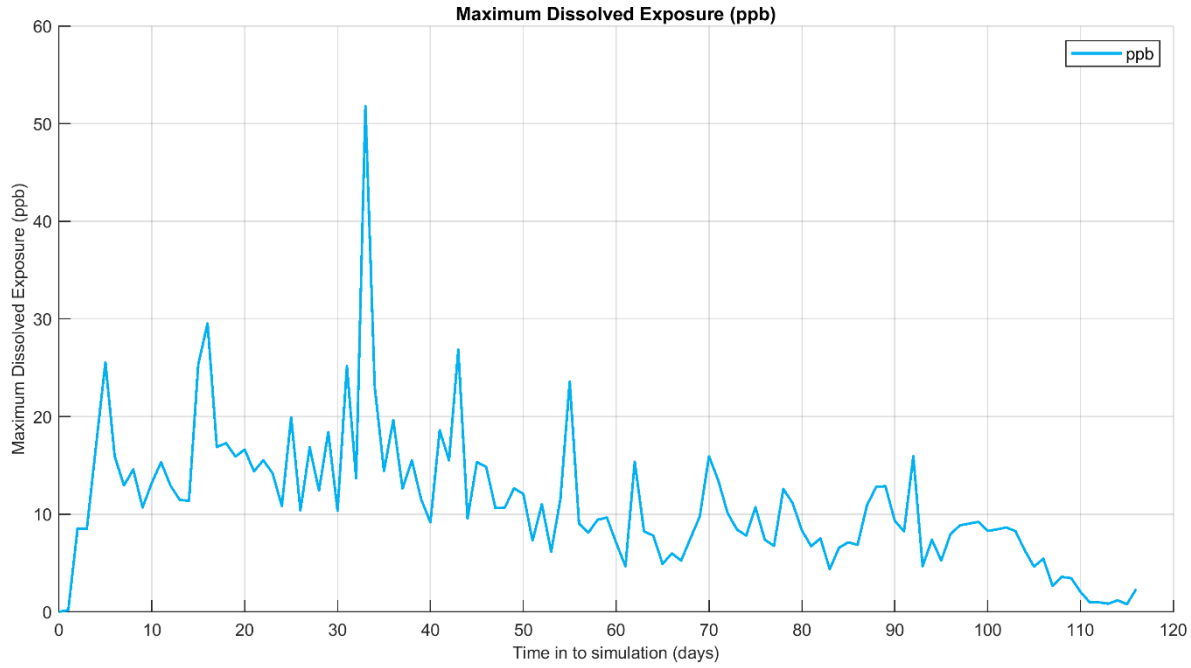

Figure 11.32 Time series of the dissolved hydrocarbon exposure area above each threshold for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

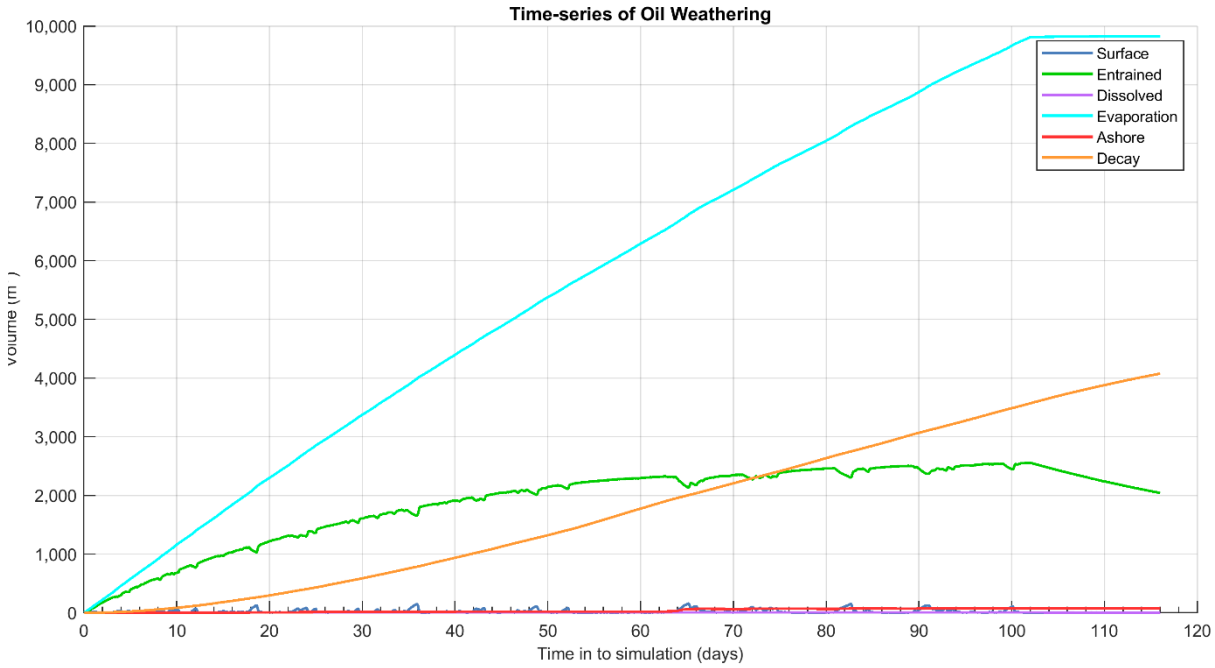

Figure 11.33 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

12 RESULTS – SCENARIO 2 – 83,273 BBL (13,239 M^3) SUBSURFACE RELEASE FROM A LOSS OF WELL CONTROL AT PECTEN EAST-2

This scenario examined an 83,273 bbl (13,239 m^3) subsurface release of condensate over 102 days to represent a LOWC scenario at Pecten East-2 well. A total of 100 spill simulations were run per season (summer and winter) and each simulation was tracked for 116 days. The results are presented on a seasonal basis.

Sections 12.1 and 12.1.1 present the seasonal stochastic analysis and deterministic analysis results, respectively.

12.1 Stochastic Analysis

12.1.1 Floating Oil Exposure

Table 12.1 summarises the maximum distance travelled by floating oil on the sea surface at each threshold. The maximum distance and corresponding direction from the release location to the low (1–10 g/m^2) and moderate (10–50 g/m^2) exposure zones was 74.4 km (east-southeast, winter) and 15.2 km (east-southeast, winter), respectively. No high (>50 g/m^2) exposure zones were predicted during either summer or winter conditions.

Table 12.2 summarises the potential floating oil exposure to individual receptors.

In summer conditions, a total of 18 BIAs were predicted to be exposed to floating oil at, or above, the low threshold. Excluding the BIAs that the release location resides within (see Section 10.3), the highest probability (8%) of low exposure was predicted at the Short-tailed Shearwater – Foraging BIA. The minimum time before low exposure to the Short-tailed Shearwater – Foraging BIA was 11.63 days.

Additionally, during winter, a total of 18 BIAs were predicted to be exposed to floating oil at, or above, the low threshold. Again, the highest probability (20%) of low exposure for any BIA was predicted at the Short-tailed Shearwater – Foraging BIA. The minimum time before low exposure to the Short-tailed Shearwater – Foraging BIA was 8.46 days.

Table 12.3 presents the maximum residence time of floating oil exposure for each individual grid cell within each individual receptor.

Figure 12.1 and Figure 12.2 present the zones of potential floating oil exposure for each season whilst Figure 12.3 to Figure 12.6 present the maximum residence time of floating oil exposure for the NOPSEMA thresholds.

Table 12.1 Maximum distance and direction from the release location to the edge of floating oil exposure. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations per season.

Distance and direction travelled	Zones of potential floating oil exposure					
	Summer			Winter		
	Low	Moderate	High	Low	Moderate	High
Maximum distance (km) from release location	67.4	12.7	-	74.4	15.2	-
Maximum distance (km) from release location (99th percentile)	45.5	12.4	-	49.7	14.9	-
Direction	ESE	ESE	-	ESE	ESE	-

Table 12.2 Summary of the potential floating oil exposure to individual receptors. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer						Winter					
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)		
		Low	Mod.	High	Low	Mod.	High	Low	Mod.	High	Low	Mod.	High
BIA	Antipodean Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Australasian Gannet - Foraging	-	-	-	-	-	-	2	-	-	10.29	-	-
	Black-browed Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Bullers Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Campbell Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Common Diving-petrel - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Indian Yellow-nosed Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Pygmy Blue Whale - Distribution*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Pygmy Blue Whale - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Pygmy Blue Whale - Foraging annual high use area*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Short-tailed Shearwater - Foraging	8	-	-	11.63	-	-	20	-	-	8.46	-	-
	Shy Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Southern Right Whale - Aggregation	100	78	-	0.04	0.75	-	100	62	-	0.13	0.58	-
	Southern Right Whale - Known Core Range*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Wandering Albatross - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	Wedge-tailed Shearwater - Foraging*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	White Shark - Distribution*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
	White Shark - Foraging	-	-	-	-	-	-	2	-	-	10.29	-	-
IBRA	Otway Plain	8	-	-	11.63	-	-	11	-	-	8.96	-	-
	Otway Ranges	-	-	-	-	-	-	8	-	-	8.46	-	-
	Warrnambool Plain	87	-	-	1.71	-	-	90	-	-	2.04	-	-
IMCRA	Otway*	100	100	-	0.04	0.08	-	100	100	-	0.04	0.08	-
KEF	Bonney Coast Upwelling	-	-	-	-	-	-	2	-	-	10.29	-	-

Receptor		Summer						Winter					
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)		
		Low	Mod.	High	Low	Mod.	High	Low	Mod.	High	Low	Mod.	High
MNP	Twelve Apostles	51	-	-	4.38	-	-	65	-	-	2.54	-	-
Nearshore Waters	Colac Otway	8	-	-	11.63	-	-	16	-	-	8.46	-	-
	Corangamite	67	-	-	2.75	-	-	81	-	-	2.54	-	-
	Lady Julia Percy Island	-	-	-	-	-	-	2	-	-	10.29	-	-
	Moyne	64	-	-	1.71	-	-	59	-	-	2.04	-	-
	Warrnambool	2	-	-	69	-	-	6	-	-	6.63	-	-
State Waters	Victoria State Waters	100	-	-	0.67	-	-	100	-	-	0.83	-	-
Nearshore Waters (Sub-LGA)	Bay of Islands	56	-	-	1.71	-	-	56	-	-	2.04	-	-
	Cape Otway West	8	-	-	11.63	-	-	16	-	-	8.46	-	-
	Childers Cove	23	-	-	3.83	-	-	9	-	-	6.63	-	-
	Moonlight Head	56	-	-	4.38	-	-	73	-	-	5.54	-	-
	Port Campbell	44	-	-	2.75	-	-	59	-	-	2.54	-	-
	Warrnambool	-	-	-	-	-	-	2	-	-	6.83	-	-

*The release location resides within the receptor boundaries.

Table 12.3 Summary of the maximum residence time of floating oil exposure for each individual grid cell within each individual receptor. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer			Winter		
		Maximum residence time of floating oil exposure (hours)			Maximum residence time of floating oil exposure (hours)		
		Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross - Foraging*	21.92	1.08	-	21	1.42	-
	Australasian Gannet - Foraging	-	-	-	0.13	-	-
	Black-browed Albatross - Foraging*	21.92	1.08	-	21	1.42	-
	Bullers Albatross - Foraging*	21.92	1.08	-	21	1.42	-
	Campbell Albatross - Foraging*	21.92	1.08	-	21	1.42	-
	Common Diving-petrel - Foraging*	21.92	1.08	-	21	1.42	-
	Indian Yellow-nosed Albatross - Foraging*	21.92	1.08	-	21	1.42	-
	Pygmy Blue Whale - Distribution*	21.92	1.08	-	21	1.42	-
	Pygmy Blue Whale - Foraging*	21.92	1.08	-	21	1.42	-
	Pygmy Blue Whale - Foraging annual high use area*	21.92	1.08	-	21	1.42	-
	Short-tailed Shearwater - Foraging	0.33	-	-	0.25	-	-
	Shy Albatross - Foraging*	21.92	1.08	-	21	1.42	-
	Southern Right Whale - Aggregation	2.5	0.21	-	2.58	0.42	-
	Southern Right Whale - Known Core Range*	21.92	1.08	-	21	1.42	-
	Wandering Albatross - Foraging*	21.92	1.08	-	21	1.42	-
	Wedge-tailed Shearwater - Foraging*	21.92	1.08	-	21	1.42	-
	White Shark - Distribution*	21.92	1.08	-	21	1.42	-
	White Shark - Foraging	-	-	-	0.13	-	-
IBRA	Otway Plain	0.33	-	-	0.25	-	-
	Otway Ranges	-	-	-	0.17	-	-
	Warrnambool Plain	1.17	-	-	1.08	-	-
IMCRA	Otway*	21.92	1.08	-	21	1.42	-
KEF	Bonney Coast Upwelling	-	-	-	0.13	-	-
MNP	Twelve Apostles	0.71	-	-	0.71	-	-

Receptor		Summer			Winter		
		Maximum residence time of floating oil exposure (hours)			Maximum residence time of floating oil exposure (hours)		
		Low	Moderate	High	Low	Moderate	High
Nearshore Waters	Colac Otway	0.33	-	-	0.25	-	-
	Corangamite	0.71	-	-	1.08	-	-
	Lady Julia Percy Island	-	-	-	0.13	-	-
	Moyne	1.08	-	-	0.79	-	-
	Warrnambool	0.17	-	-	0.67	-	-
State Waters	Victoria State Waters	1.58	-	-	1.08	-	-
Nearshore Waters (Sub-LGA)	Bay of Islands	0.96	-	-	0.79	-	-
	Cape Otway West	0.33	-	-	0.25	-	-
	Childers Cove	1.08	-	-	0.67	-	-
	Moonlight Head	0.71	-	-	0.83	-	-
	Port Campbell	0.71	-	-	1.08	-	-
	Warrnambool	-	-	-	0.04	-	-

*The release location resides within the receptor boundaries.

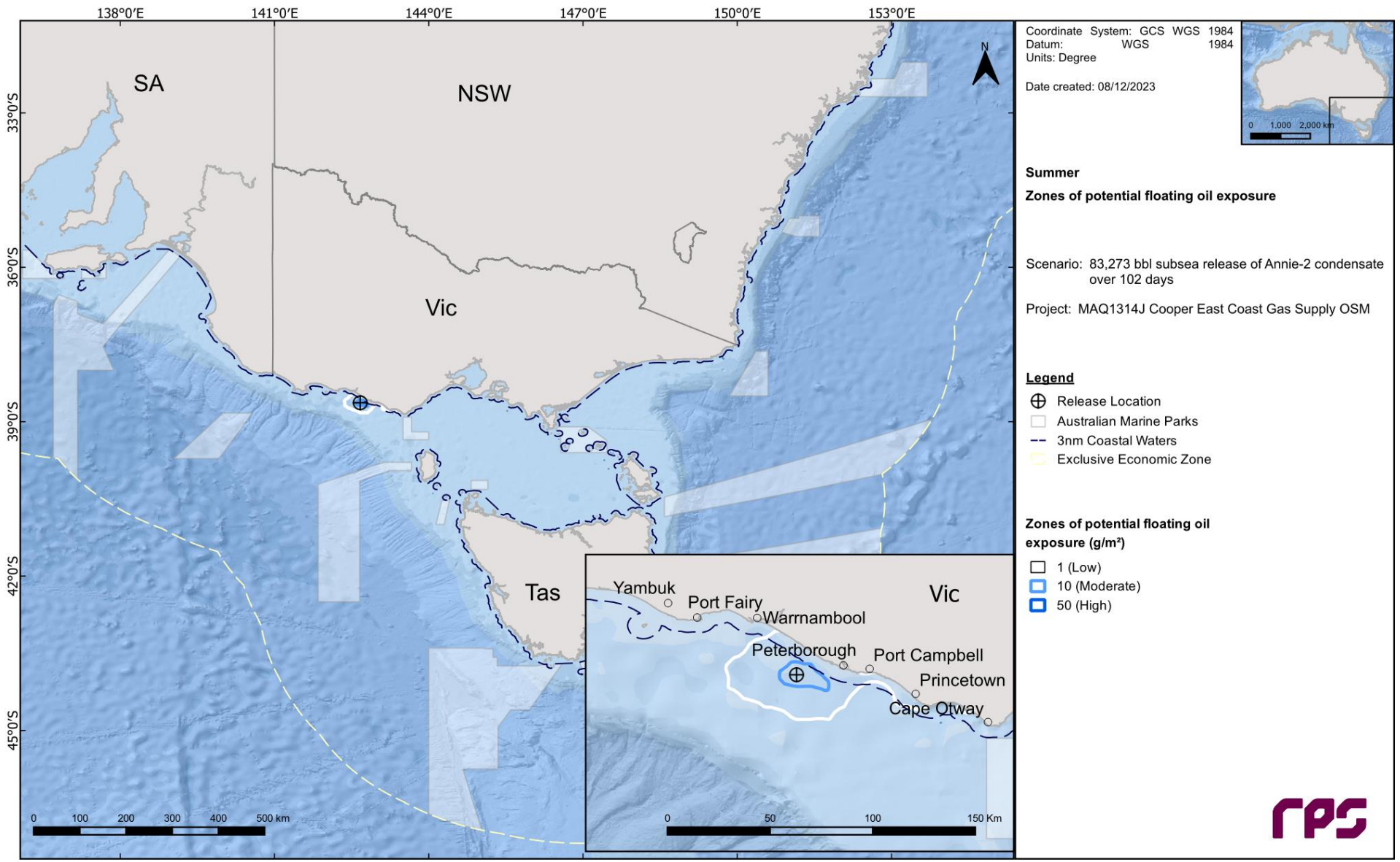

Figure 12.1 Zones of potential floating oil exposure in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

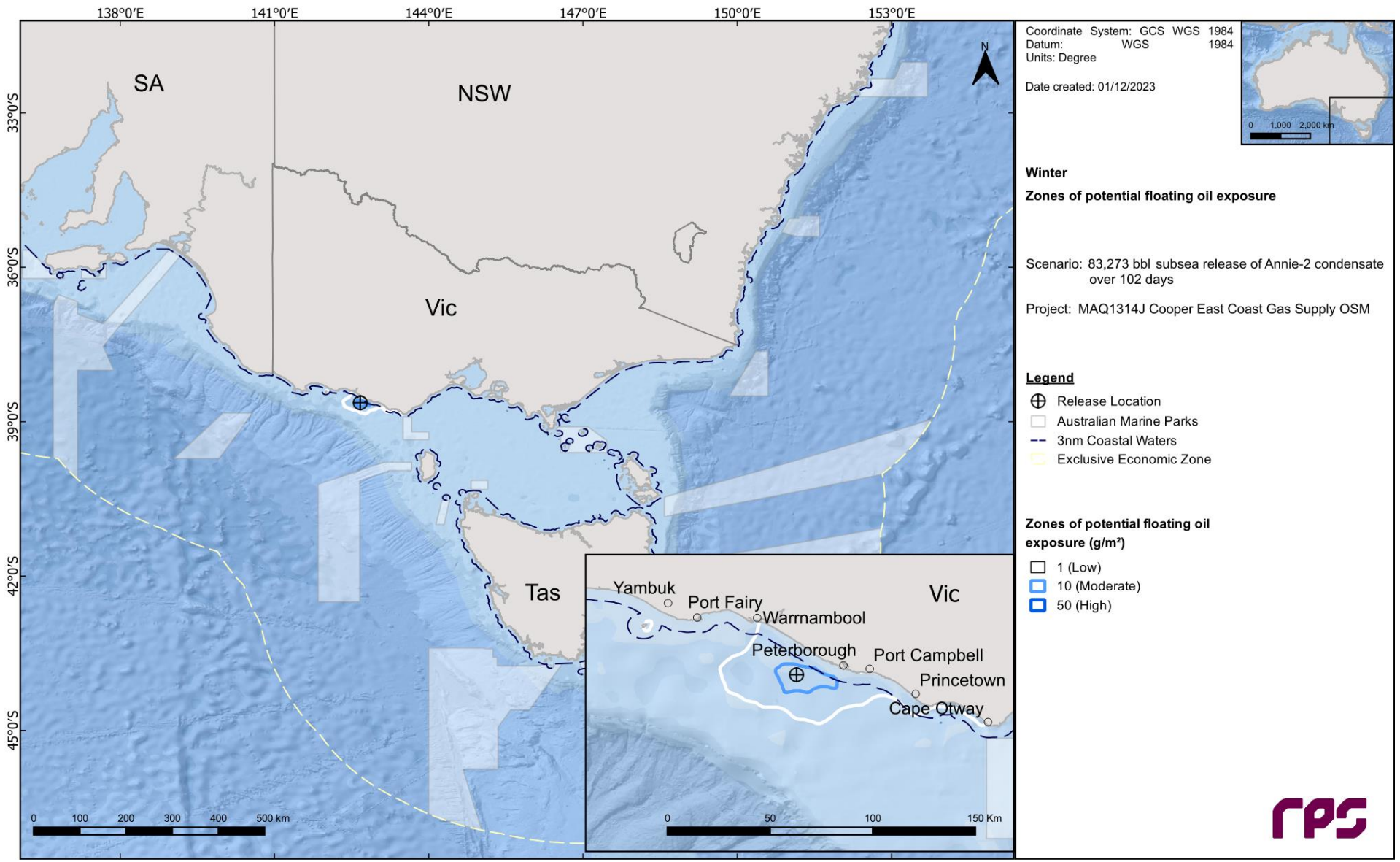

Figure 12.2 Zones of potential floating oil exposure in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

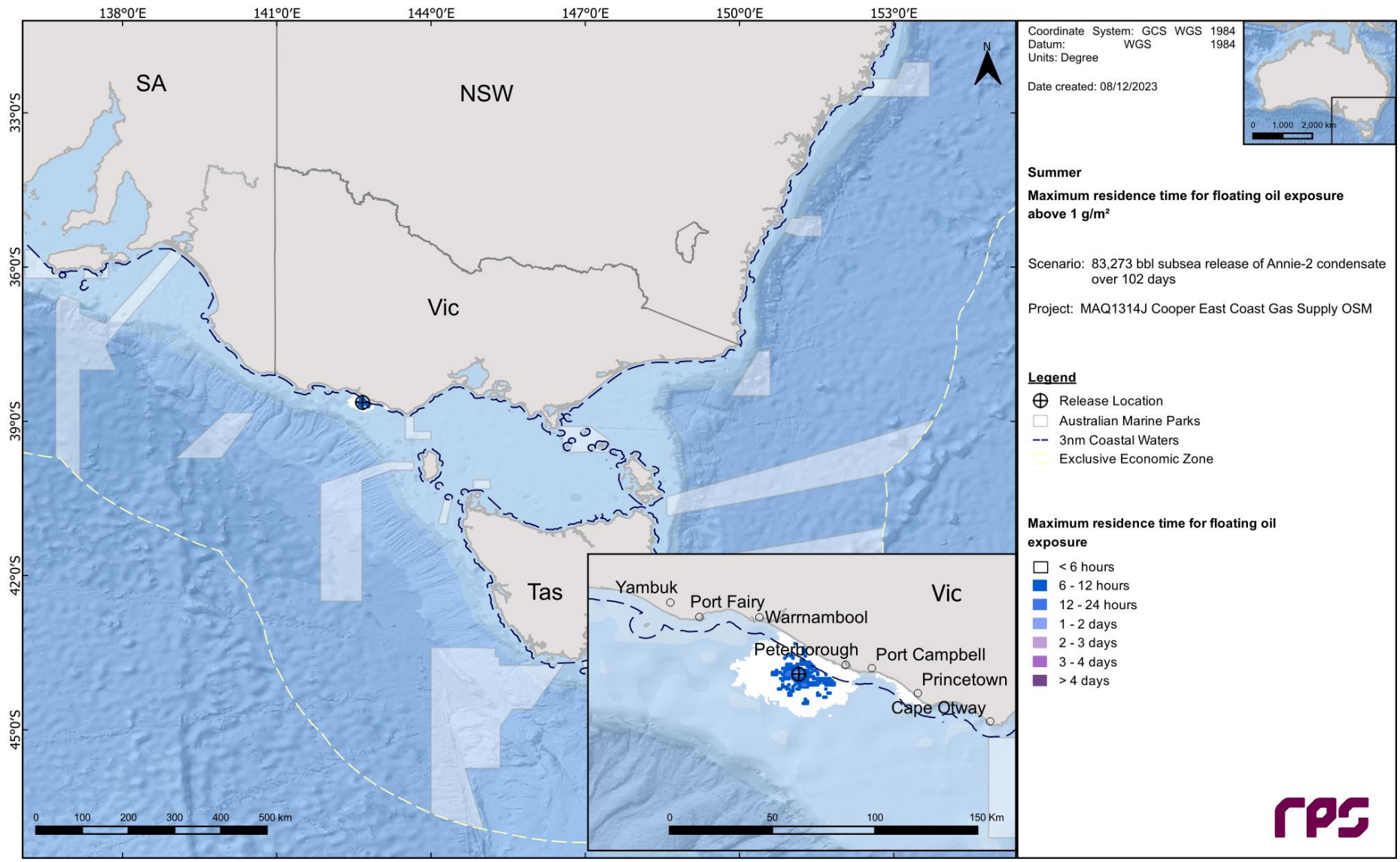

Figure 12.3 Maximum residence time of floating oil exposure above 1 g/m^2, in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

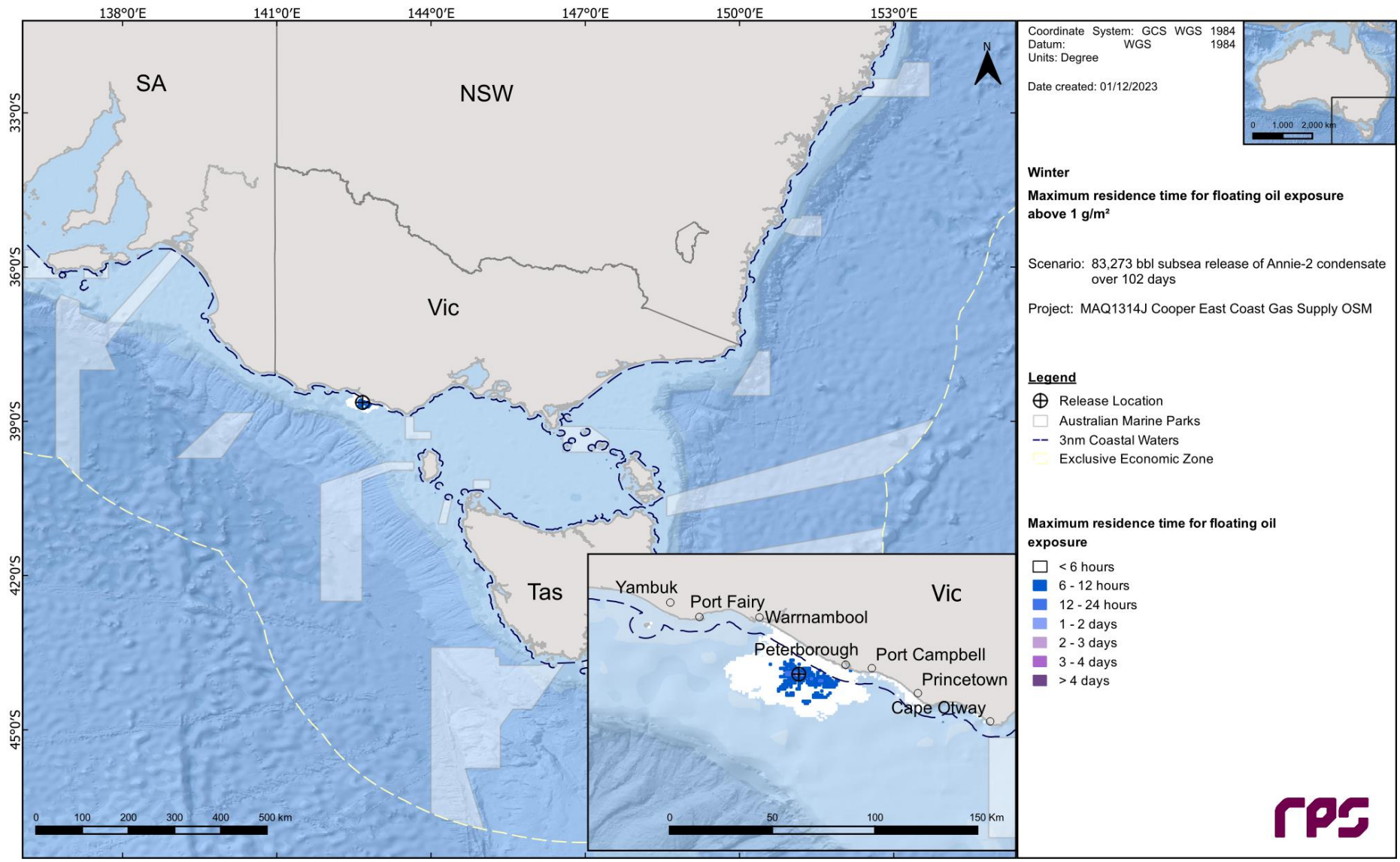

Figure 12.4 Maximum residence time of floating oil exposure above 1 g/m^2, in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

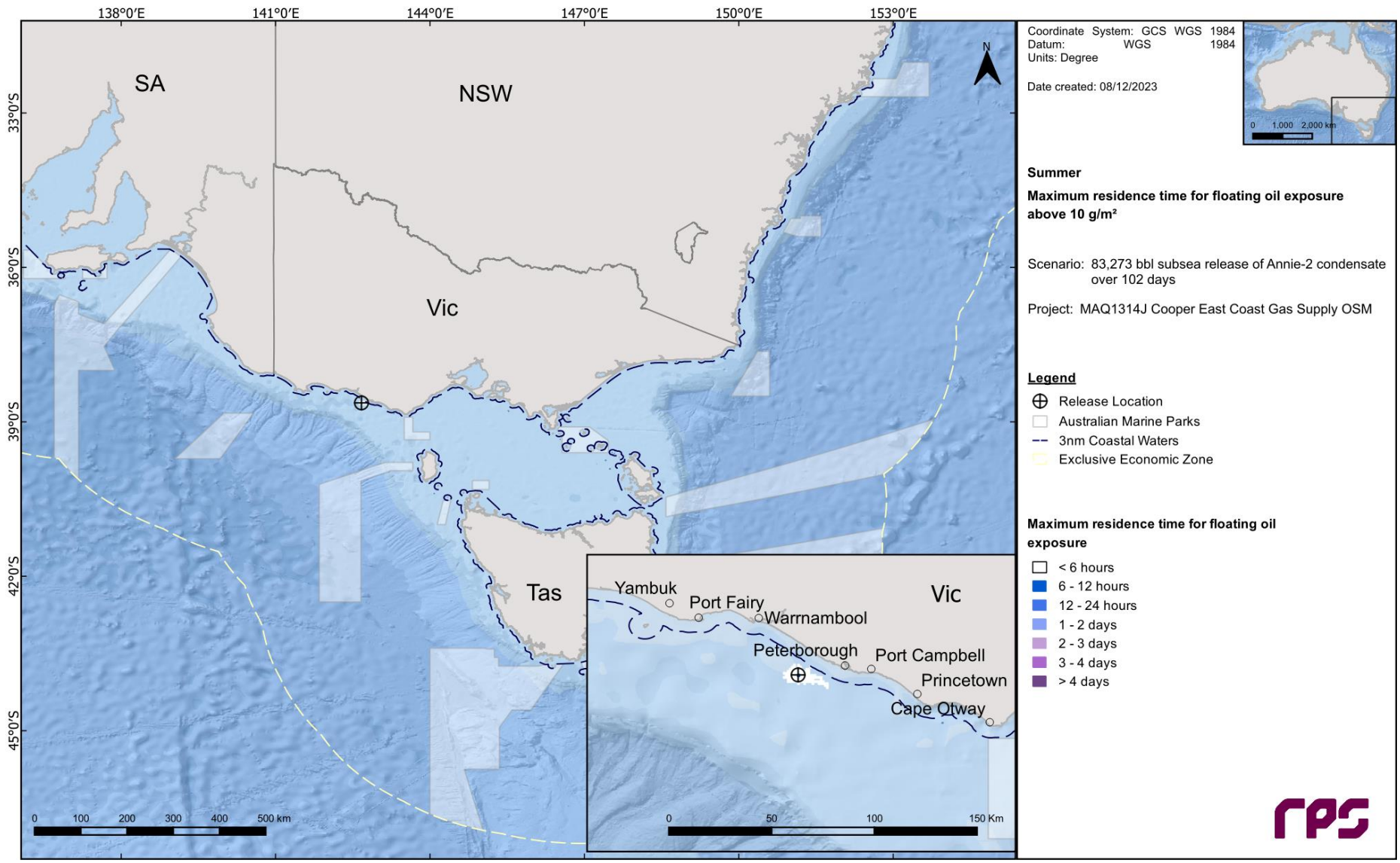

Figure 12.5 Maximum residence time of floating oil exposure above 10 g/m^2, in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

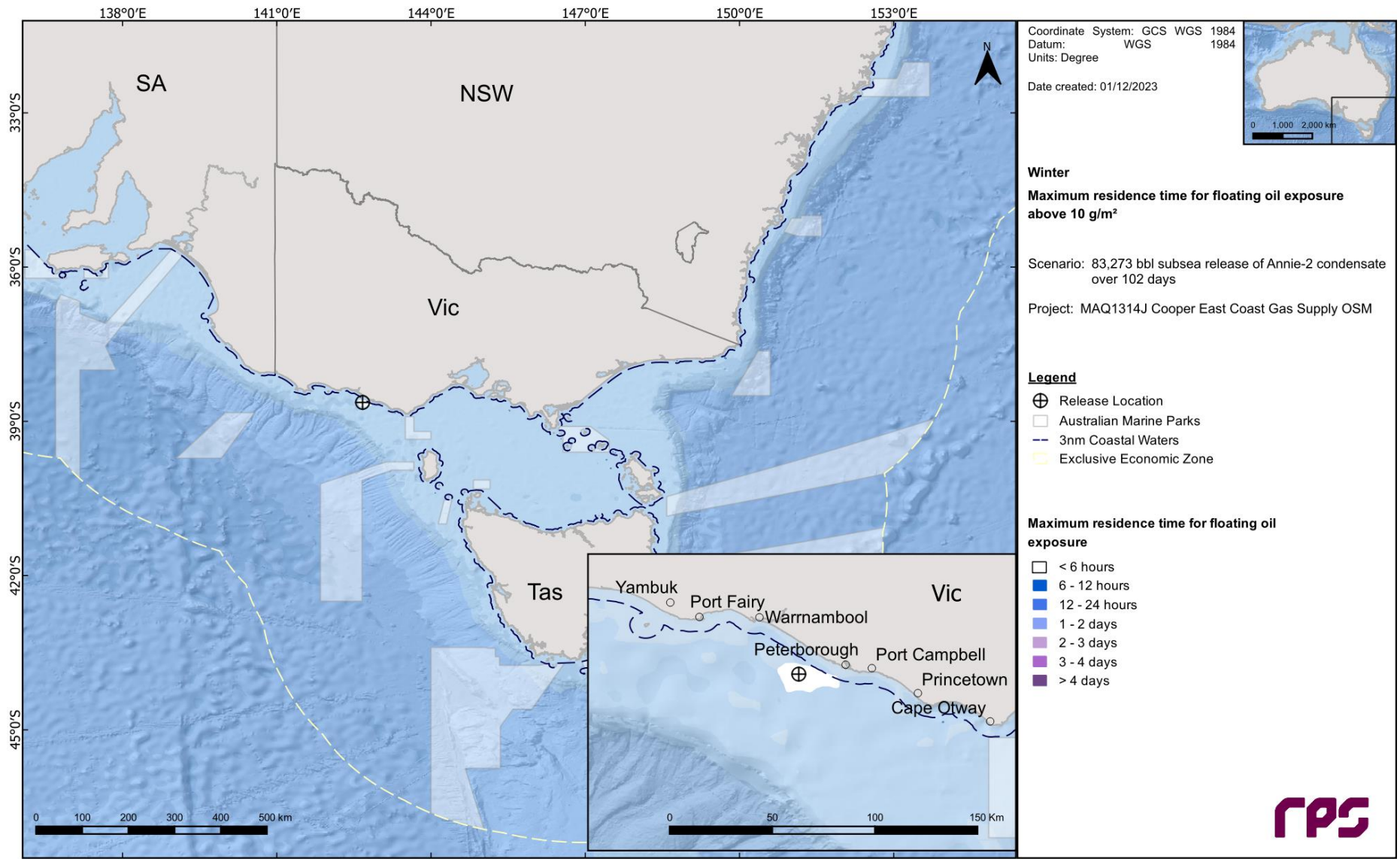

Figure 12.6 Maximum residence time of floating oil exposure above 10 g/m^2, in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

12.1.2 Shoreline Accumulation

Table 12.4 presents a summary of the potential shoreline accumulation. The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 100% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 1.17 days. The maximum total volume ashore for a single spill trajectory was 406.6 m^3, and the maximum length of shoreline with accumulation above the low, moderate and high thresholds were 269.0 km (summer), 75.0 km (summer) and 6.0 km (winter), respectively.

Table 12.5 and Table 12.6 summarises the shoreline accumulation on individual receptors during summer and winter, respectively.

During summer conditions, the shoreline segment of Bay of Islands and Moyne had the highest probabilities of accumulation above all three thresholds with probabilities of 100%, 99% and 14% for the low, moderate and high thresholds. It is acknowledged that Corangamite and Moyne LGA and Port Campbell sub-LGA demonstrated 100% for low threshold shoreline accumulation. The minimum time for low threshold shoreline accumulation at these receptors was 1.21 days (Bay of Islands and Moyne LGAs).

Alternatively, in winter the shoreline segment with the highest probability of accumulation above all three thresholds was Corangamite with probabilities of 100%, 100% and 23% for the low, moderate and high thresholds. The minimum time for low threshold shoreline accumulation at Bay of Islands and Moyne LGA was 1.17 days.

The maximum potential shoreline loadings above each shoreline thresholds are presented in Figure 12.7 and Figure 12.8 for summer and winter respectively.

Table 12.4 Summary of oil accumulation across all shorelines. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations per season.

Shoreline Statistics	Summer	Winter
Probability of accumulation on any shoreline (%)	100	100
Absolute minimum time for visible oil to shore (days)	1.21	1.17
Maximum total volume of hydrocarbons ashore (m^3)	347.3	406.6
Average total volume of hydrocarbons ashore (m^3)	169.8	204.1
Maximum length of the shoreline at **10 g/m^2** (km)	269.0	251.0
Average shoreline length (km) at **10 g/m^2** (km)	150.8	154.0
Maximum length of the shoreline at **100 g/m^2** (km)	78.0	76.0
Average shoreline length (km) at **100 g/m^2** (km)	37.9	42.5
Maximum length of the shoreline at **1,000 g/m^2** (km)	4.0	6.0
Average shoreline length (km) at **1,000 g/m^2** (km)	2.4	2.0

Table 12.5 Summary of oil accumulation on individual shoreline receptors. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
LGA Shoreline	Anglesea	7	-	-	54.54	-	-	3	27	0.5	2.8	5.1	-	-	9.1	-	-
	Apollo Bay	62	-	-	10.92	-	-	6	73	1.9	5.5	6	-	-	13.6	-	-
	Bass Coast	6	-	-	20.38	-	-	2	22	0.3	1.3	1.4	-	-	3.6	-	-
	Bay of Islands	100	99	14	1.21	1.50	26.46	134	2,545	52	142.8	24.3	11.4	2	29.1	21.8	3.6
	Bega Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Colac Otway	92	60	-	4.46	12.17	-	21	471	21.1	59.3	26.6	7.3	-	54.5	17.3	-
	Corangamite	100	99	-	1.75	3.21	-	81	936	61.6	118.8	43.6	14.3	-	56.3	26.4	-
	East Gippsland	10	-	-	80.50	-	-	2	25	0.6	1.8	1.9	-	-	3.6	-	-
	French Island	2	-	-	53.83	-	-	2	21	< 0.1	0.5	0.9	-	-	0.9	-	-
	Gabo Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Glenelg	53	12	-	6.92	10.58	-	9	250	9.4	23.2	16.3	2.7	-	47.2	6.4	-
	Glennie Group	19	-	-	24.92	-	-	4	39	0.5	1.9	2.1	-	-	5.5	-	-
	Grant	4	-	-	22.33	-	-	2	25	0.6	5.2	4.3	-	-	9.1	-	-
	Greater Geelong	14	5	-	32.04	57.71	-	6	137	1.8	9.6	6.4	1.6	-	14.5	1.8	-
	Hogan Island Group	1	-	-	110.67	-	-	1	11	0.1	0.4	0.9	-	-	0.9	-	-
	Kanowna Island	9	-	-	92.04	-	-	3	16	0.2	0.7	1.2	-	-	1.8	-	-
	King Island	2	-	-	84.63	-	-	1	14	0.4	1.4	1.4	-	-	1.8	-	-
	Lady Julia Percy Island	60	23	-	4.21	16.67	-	30	195	2.8	5.8	4.3	1.6	-	6.4	2.7	-
	Laurence Rocks	45	-	-	8.67	-	-	19	78	0.7	1.9	2.1	-	-	2.7	-	-
	Moncoeur Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Montague Island	1	-	-	87.79	-	-	2	15	< 0.1	0.4	0.9	-	-	0.9	-	-
	Mornington Peninsula	18	-	-	38.29	-	-	2	32	1	5.2	4.8	-	-	14.5	-	-
	Moyne	100	99	14	1.21	1.50	26.33	71	2,545	69.4	168.1	40.1	14.6	2.2	81.8	31.8	3.6
	Norman Island	8	-	-	21.96	-	-	4	29	0.2	0.8	1.4	-	-	2.7	-	-
	Phillip Island	10	-	-	45.67	-	-	2	33	0.4	3.1	2.3	-	-	7.3	-	-
	Rodondo Island	12	-	-	71.58	-	-	4	36	0.2	0.8	1.1	-	-	1.8	-	-
	Shellback Island	1	-	-	31.13	-	-	3	11	< 0.1	0.2	0.9	-	-	0.9	-	-
	Skull Rock	3	-	-	92.04	-	-	3	16	< 0.1	0.3	0.9	-	-	0.9	-	-
	South Gippsland	28	-	-	20.17	-	-	3	77	2.3	13.4	9.7	-	-	29.1	-	-
	Surf Coast	13	2	-	24.96	58.96	-	3	116	1.5	11.3	10.4	0.9	-	24.5	0.9	-
	Warrnambool	81	23	-	3.50	12.17	-	20	738	6.1	28.2	11.6	3.2	-	22.7	6.4	-
Sub-LGA Shoreline	Bega Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cape Conran	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cape Howe / Mallacoota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cape Liptrap (NW)	16	-	-	20.17	-	-	3	77	0.7	4.2	4.4	-	-	10	-	-
	Cape Nelson	53	12	-	6.92	10.58	-	12	250	8.2	22.3	14.5	2.7	-	30.9	6.4	-
	Cape Otway West	92	60	-	4.46	12.17	-	38	471	18.4	53.9	20.4	7.3	-	34.5	17.3	-
	Cape Patton	33	-	-	16.46	-	-	4	71	1.2	8	5.6	-	-	17.3	-	-
	Childers Cove	96	65	2	1.42	3.88	26.33	50	1,577	17.9	87	15.6	5.3	1.4	24.5	12.7	1.8
	Croajingolong (West)	5	-	-	86.63	-	-	2	24	0.2	0.8	0.9	-	-	0.9	-	-
	Discovery Bay (East)	4	-	-	27.75	-	-	2	17	0.3	1.6	2	-	-	4.5	-	-
	Discovery Bay (West)	2	-	-	29.83	-	-	2	20	0.3	1.9	4.1	-	-	5.5	-	-
	French Island / Crib Point	1	-	-	96.63	-	-	2	14	< 0.1	0.2	0.9	-	-	0.9	-	-

Shoreline Receptor	Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
	Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Kilcunda	5	-	-	21.13	-	-	2	22	0.2	0.6	0.9	-	-	0.9	-	-
Lorne	13	-	-	24.96	-	-	3	17	0.5	1.9	2	-	-	5.5	-	-
Marlo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moonlight Head	98	94	-	2.50	4.58	-	84	781	34	83.6	20.4	8.5	-	30	14.5	-
Mornington Peninsula (S)	11	-	-	39.96	-	-	3	32	0.4	2.7	4	-	-	7.3	-	-
Mornington Peninsula (SW)	16	-	-	38.29	-	-	2	28	0.5	2.7	2.5	-	-	9.1	-	-
New South Wales	1	-	-	87.79	-	-	2	15	0.3	0.9	0.9	-	-	0.9	-	-
Point Hicks	9	-	-	80.50	-	-	3	25	0.3	0.8	1.6	-	-	2.7	-	-
Port Campbell	100	91	-	1.75	3.21	-	79	936	27.8	62.2	23.3	6.7	-	26.4	15.4	-
Port Fairy	64	8	-	7.75	13.38	-	11	249	4	15	7.8	2.3	-	26.4	4.5	-
Port Phillip (Queenscliff)	14	-	-	32.04	-	-	3	30	0.5	1.2	1.8	-	-	2.7	-	-
Port Phillip (Sorrento Shore)	1	-	-	50.13	-	-	2	11	0.2	0.5	0.9	-	-	0.9	-	-
Portland Bay (East)	13	-	-	20.29	-	-	3	26	0.5	2.1	2	-	-	4.5	-	-
Portland Bay (West)	22	-	-	24.5	-	-	3	31	0.7	2.2	2.8	-	-	6.4	-	-
South Australia State Waters	4	-	-	22.33	-	-	2	25	0.7	6	4.3	-	-	9.1	-	-
Tasmania State Waters	3	-	-	84.63	-	-	1	14	0.4	1.6	1.2	-	-	1.8	-	-
Torquay	8	5	-	32.96	57.71	-	6	137	2.2	16.2	18.9	2	-	26.4	2.7	-
Venus Bay	2	-	-	20.38	-	-	2	14	0.2	0.8	1.8	-	-	2.7	-	-
Victoria State Waters	100	100	14	1.21	1.5	26.33	39	2,545	169.2	347.3	136.8	34.4	2.2	244.4	70.9	3.6
Waratah Bay	4	-	-	97.17	-	-	2	30	0.2	0.7	0.9	-	-	0.9	-	-
Warrnambool	67	9	-	3.83	12.17	-	10	179	2.8	14.9	7.4	2	-	20.9	5.5	-
Westernport	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wilsons Promontory (East)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wilsons Promontory (West)	28	-	-	21.54	-	-	5	74	1.7	9.1	7	-	-	19.1	-	-

Table 12.6 Summary of oil accumulation on individual shoreline receptors. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
LGA Shoreline	Anglesea	6	-	-	14.71	-	-	2	43	0.3	3.9	4.1	-	-	9.1	-	-
	Apollo Bay	89	-	-	7.17	-	-	8	92	2.5	7.2	6.4	-	-	14.5	-	-
	Bass Coast	9	-	-	31.33	-	-	2	22	0.4	1.6	1.5	-	-	3.6	-	-
	Bay of Islands	100	97	11	1.17	2.42	36.13	119	1,431	45.6	136.7	21.4	10	1.4	29.1	20.9	3.6
	Bega Valley	17	-	-	35.21	-	-	2	32	0.5	1.6	1.9	-	-	3.6	-	-
	Colac Otway	98	87	-	4.08	8.54	-	27	394	29.3	67.8	34.1	7.7	-	63.6	15.4	-
	Corangamite	100	100	23	2.04	3.96	41.5	132	1,603	102.4	237.4	48.9	19.5	1.5	57.2	35.4	5.5
	East Gippsland	46	-	-	40.92	-	-	3	66	1.4	4.6	3.2	-	-	6.4	-	-
	French Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gabo Island	15	-	-	41.83	-	-	4	33	0.2	0.9	1.8	-	-	2.7	-	-
	Glenelg	19	1	-	25.96	108.21	-	4	109	3.9	16.3	12.6	0.9	-	37.3	0.9	-
	Glennie Group	48	-	-	24.75	-	-	5	41	0.7	2.3	2.5	-	-	7.3	-	-
	Grant	4	-	-	58.38	-	-	2	25	0.8	3.9	2.7	-	-	5.5	-	-
	Greater Geelong	5	3	-	15.58	17.21	-	3	187	0.7	12.3	8.7	3	-	14.5	3.6	-
	Hogan Island Group	1	-	-	82.46	-	-	2	12	0.2	0.7	2.7	-	-	2.7	-	-
	Kanowna Island	29	-	-	27.63	-	-	5	41	0.4	1	2	-	-	2.7	-	-
	King Island	10	-	-	33.79	-	-	2	26	0.8	2.7	2.2	-	-	4.5	-	-
	Lady Julia Percy Island	34	11	-	10	10.5	-	22	234	2.1	7	3.9	1.6	-	6.4	2.7	-
	Laurence Rocks	13	-	-	21.54	-	-	9	37	0.3	1	1.8	-	-	2.7	-	-
	Moncoeur Islands	2	-	-	92.5	-	-	2	12	0.1	0.4	0.9	-	-	0.9	-	-
	Montague Island	6	-	-	65.96	-	-	4	25	0.2	0.8	1.5	-	-	2.7	-	-
	Mornington Peninsula	33	-	-	14.08	-	-	3	44	1.2	5.9	3.5	-	-	13.6	-	-
	Moyne	100	99	13	1.17	2.42	12.08	77	1,431	55.3	184.3	32.4	11.4	1.3	98.1	36.3	3.6
	Norman Island	17	-	-	25.75	-	-	4	30	0.2	0.9	1.7	-	-	2.7	-	-
	Phillip Island	39	-	-	15.38	-	-	3	47	0.9	3.2	2.5	-	-	7.3	-	-
	Rodondo Island	34	-	-	16.58	-	-	6	48	0.3	1.3	1.5	-	-	2.7	-	-
	Shellback Island	2	-	-	49.17	-	-	3	12	< 0.1	0.2	0.9	-	-	0.9	-	-
	Skull Rock	27	-	-	27.63	-	-	5	23	0.2	0.5	1.1	-	-	1.8	-	-
	South Gippsland	65	1	-	20.88	72.54	-	5	106	3.5	12.2	9.1	0.9	-	23.6	0.9	-
	Surf Coast	9	2	-	14.71	18.29	-	2	124	0.9	13	8.8	0.9	-	24.5	0.9	-
	Warrnambool	56	23	1	5.13	6.92	12.13	25	1,185	7.5	43.2	11	3.6	0.9	25.4	11.8	0.9
Sub-LGA Shoreline	Bega Valley	17	-	-	35.21	-	-	2	32	0.5	1.6	1.9	-	-	3.6	-	-
	Cape Conran	1	-	-	70.46	-	-	1	11	< 0.1	0.4	0.9	-	-	0.9	-	-
	Cape Howe / Mallacoota	14	-	-	40.92	-	-	3	16	0.2	0.8	1	-	-	1.8	-	-
	Cape Liptrap (NW)	51	-	-	20.88	-	-	5	50	0.8	2.4	2.4	-	-	7.3	-	-
	Cape Nelson	18	1	-	25.96	108.21	-	5	109	2.9	11.8	9.8	0.9	-	24.5	0.9	-
	Cape Otway West	98	87	-	4.08	8.54	-	51	394	25.2	49.6	25	7.7	-	32.7	15.4	-
	Cape Patton	60	1	-	13.75	44.13	-	5	102	1.7	13.1	5.3	0.9	-	19.1	0.9	-
	Childers Cove	80	30	2	2.54	4.92	12.08	30	1,185	10.1	99	11.4	5.6	1.4	24.5	17.3	1.8
	Croajingolong (West)	22	-	-	47	-	-	3	37	0.3	1	1	-	-	1.8	-	-
	Discovery Bay (East)	1	-	-	70.25	-	-	2	16	0.4	1.7	2.7	-	-	2.7	-	-
	Discovery Bay (West)	1	-	-	65.79	-	-	2	12	0.4	1.7	3.6	-	-	3.6	-	-
	French Island / Crib Point	3	-	-	28	-	-	2	19	< 0.1	0.3	0.9	-	-	0.9	-	-

Shoreline Receptor	Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
	Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Kilcunda	4	-	-	46.42	-	-	2	16	0.2	0.7	1.1	-	-	1.8	-	-
Lorne	8	-	-	20	-	-	2	28	0.3	1.5	2.2	-	-	3.6	-	-
Marlo	12	-	-	69.75	-	-	2	23	0.2	0.6	0.9	-	-	0.9	-	-
Moonlight Head	100	100	21	2.71	5.96	44.92	154	1,603	63.9	167.5	25.5	11.4	1.2	30.9	15.4	4.5
Mornington Peninsula (S)	29	-	-	14.08	-	-	4	44	0.6	3.8	2.7	-	-	10.9	-	-
Mornington Peninsula (SW)	19	-	-	17.42	-	-	3	28	0.5	1.4	1.5	-	-	2.7	-	-
New South Wales	20	-	-	35.21	-	-	2	32	0.6	2	2	-	-	4.5	-	-
Point Hicks	41	-	-	41.04	-	-	6	66	0.7	2.2	2.3	-	-	3.6	-	-
Port Campbell	100	91	10	2.04	3.96	41.5	109	1,348	38.4	108.6	23	8.9	1	26.4	21.8	1.8
Port Fairy	40	17	-	10.21	13.29	-	15	379	5.6	23.9	10	2.1	-	30	4.5	-
Port Phillip (Queenscliff)	5	-	-	20.08	-	-	2	35	0.1	1.1	1.6	-	-	2.7	-	-
Port Phillip (Sorrento Shore)	2	-	-	35.42	-	-	2	12	0.1	0.4	0.9	-	-	0.9	-	-
Portland Bay (East)	10	-	-	12.79	-	-	3	38	0.8	3.7	5.3	-	-	13.6	-	-
Portland Bay (West)	8	-	-	27.71	-	-	4	55	1.1	5.7	6.6	-	-	19.1	-	-
South Australia State Waters	4	-	-	58.38	-	-	2	25	0.9	4.3	2.7	-	-	5.5	-	-
Tasmania State Waters	11	-	-	33.79	-	-	2	26	0.7	3	2.2	-	-	4.5	-	-
Torquay	5	3	-	14.79	17.21	-	4	187	1.1	20.4	16.7	3.6	-	29.1	4.5	-
Venus Bay	7	-	-	31.33	-	-	2	22	0.2	1.2	1.3	-	-	1.8	-	-
Victoria State Waters	100	100	29	1.17	2.42	12.08	42	1,603	203.2	406.3	139.2	38.6	1.8	228.1	69.1	5.5
Waratah Bay	4	-	-	48.04	-	-	2	27	0.1	0.8	0.9	-	-	0.9	-	-
Warrnambool	46	15	-	7	13.38	-	14	470	4.2	34.7	7.7	2.6	-	28.2	9.1	-
Westernport	2	-	-	49.67	-	-	2	11	0.2	0.7	1.4	-	-	1.8	-	-
Wilsons Promontory (East)	1	-	-	107.75	-	-	1	18	0.1	0.9	1.8	-	-	1.8	-	-
Wilsons Promontory (West)	62	1	-	24	72.54	-	7	106	2.7	8.8	7.4	0.9	-	18.2	0.9	-

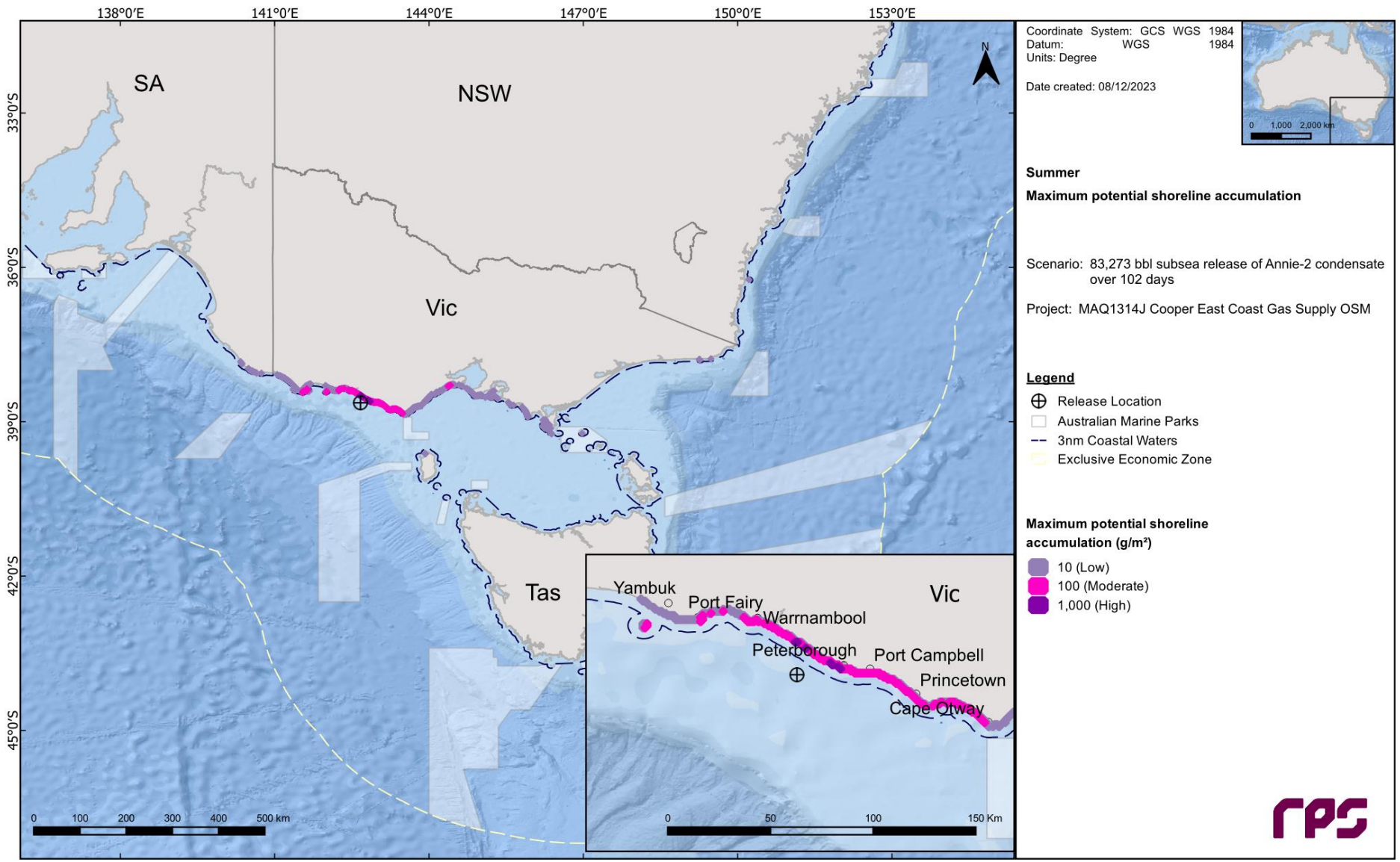

Figure 12.7 Maximum potential shoreline accumulation in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

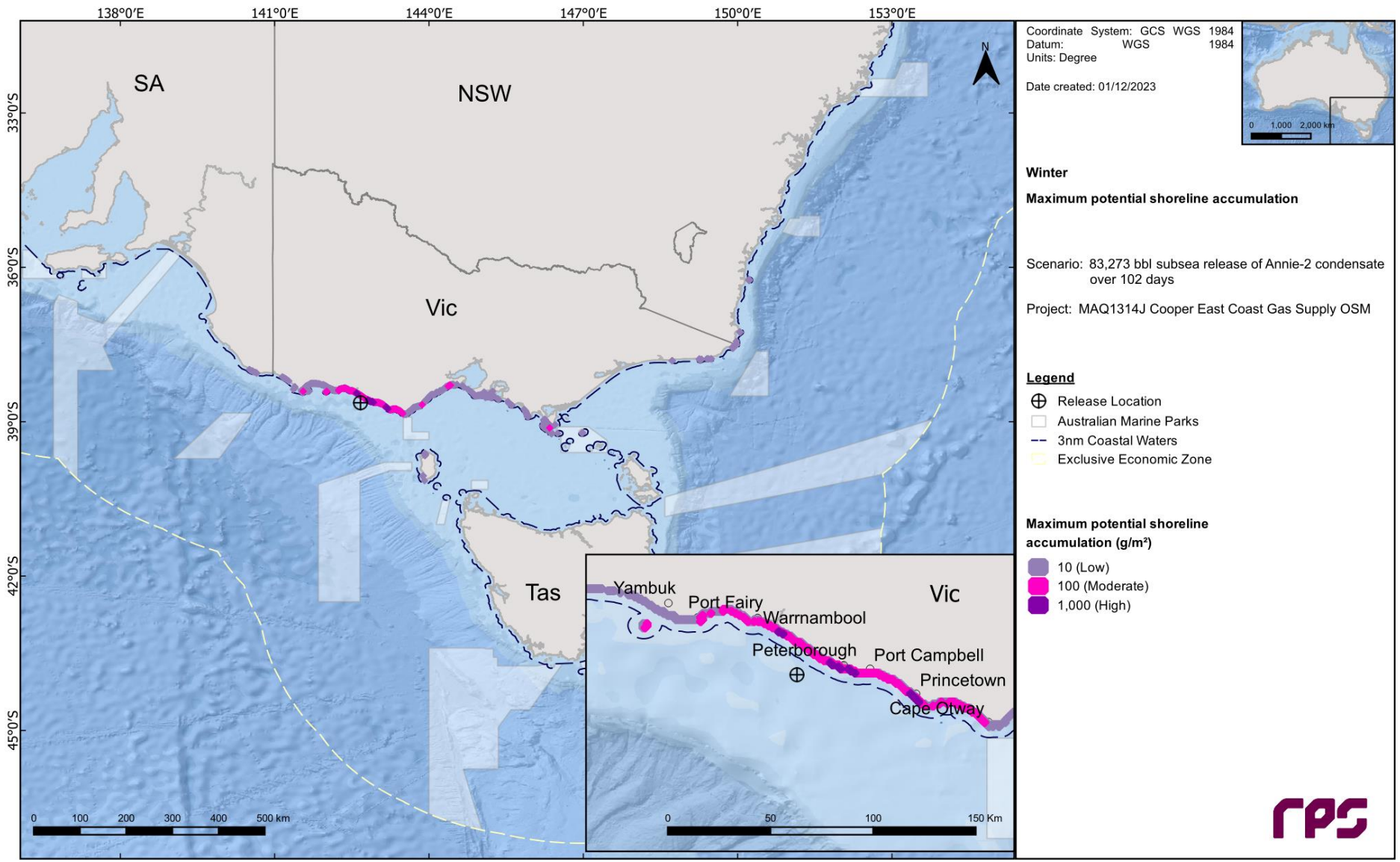

Figure 12.8 Maximum potential shoreline accumulation in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

12.1.3 In-water exposure

12.1.3.1 Dissolved Hydrocarbons

Table 12.7 summarises the potential in-water exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer.

A total of 20 BIAs were predicted to be exposed to dissolved hydrocarbon at, or above, the low threshold during both winter and summer. Excluding the BIAs that the release location resides within (see Section 10.3), the highest probability of low exposure was 21% during summer (Short-tailed Shearwater - Foraging,) and 59% during winter (Short-tailed Shearwater - Foraging).

The maximum dissolved hydrocarbon concentration at any given receptor(s) was predicted to be 50.1 ppb and 51.7 ppb during summer and winter respectively.

Table 12.8 presents the predicted minimum time to dissolved hydrocarbon exposure and maximum residence time for dissolved hydrocarbon exposure to individual receptors, in the 0-10 m depth layer, for all thresholds assessed.

Figure 12.9 and Figure 12.10 present the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layer for each season whilst Figure 12.11to Figure 12.12 present the maximum residence time of dissolved hydrocarbon exposure for the NOPSEMA thresholds.

Table 12.7 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer				Winter			
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure(%)			Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)		
			Low	Moderate	High		Low	Moderate	High
AMP	Apollo	13.3	2	-	-	22.8	4	-	-
BIA	Antipodean Albatross - Foraging*	40.4	28	-	-	39.5	35	-	-
	Australasian Gannet - Foraging	18.9	2	-	-	20.9	2	-	-
	Black-browed Albatross - Foraging*	40.4	28	-	-	43.1	35	-	-
	Bullers Albatross - Foraging*	40.4	28	-	-	43.1	35	-	-
	Campbell Albatross - Foraging*	40.4	28	-	-	43.1	35	-	-
	Common Diving-petrel - Foraging*	50.1	36	1	-	51.7	73	1	-
	Indian Yellow-nosed Albatross - Foraging*	40.4	28	-	-	43.1	35	-	-
	Pygmy Blue Whale - Distribution*	50.1	36	1	-	51.7	73	1	-
	Pygmy Blue Whale - Foraging*	50.1	36	1	-	51.7	73	1	-
	Pygmy Blue Whale - Foraging annual high use area*	50.1	36	1	-	51.7	73	1	-
	Pygmy Blue Whale - Known Foraging Area	18.8	2	-	-	43.1	4	-	-
	Short-tailed Shearwater - Foraging	27.7	21	-	-	43.1	59	-	-
	Shy Albatross - Foraging*	50.1	36	1	-	51.7	73	1	-
	Southern Right Whale - Aggregation	40.4	10	-	-	36.1	11	-	-
	Southern Right Whale - Known Core Range*	50.1	36	1	-	51.7	73	1	-
	Wandering Albatross - Foraging*	40.4	28	-	-	43.1	35	-	-
	Wedge-tailed Shearwater - Foraging*	50.1	36	1	-	51.7	73	1	-
	White Shark - Distribution*	40.4	28	-	-	43.1	35	-	-
	White Shark - Foraging	21.2	3	-	-	20.9	2	-	-
	White-faced Storm-petrel - Foraging	16.8	1	-	-	43.1	3	-	-
IBRA	Otway Plain	21.1	6	-	-	25.2	16	-	-
	Otway Ranges	20.4	6	-	-	31.8	30	-	-
	Warrnambool Plain	50.1	35	1	-	44.4	72	-	-

Receptor		Summer				Winter			
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure(%)			Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)		
			Low	Moderate	High		Low	Moderate	High
IMCRA	Central Bass Strait	16.8	1	-	-	24.8	3	-	-
	Central Victoria	16.1	1	-	-	43.1	4	-	-
	Otway*	50.1	36	1	-	51.7	73	1	-
KEF	Bonney Coast Upwelling	18.9	1	-	-	20.9	2	-	-
MNP	Twelve Apostles	44.1	35	-	-	51.7	69	1	-
RSB	Bravenes Rock	10.7	1	-	-	8.9	-	-	-
Nearshore Waters	Colac Otway	21.1	6	-	-	25.2	16	-	-
	Corangamite	50.1	35	1	-	44.4	72	-	-
	Lady Julia Percy Island	8.2	-	-	-	15.1	2	-	-
	Moyne	25.2	23	-	-	26.6	27	-	-
	Warrnambool	6.7	-	-	-	19.4	2	-	-
State Waters	Victoria State Waters	50.1	36	1	-	51.7	73	1	-
Nearshore Waters (Sub-LGA)	Apollo Bay	17.8	2	-	-	16.5	1	-	-
	Bay of Islands	25.2	23	-	-	26.6	27	-	-
	Cape Otway West	21.1	6	-	-	25.2	16	-	-
	Childers Cove	12.1	1	-	-	19.4	4	-	-
	Moonlight Head	50.1	35	1	-	44.4	72	-	-
	Port Campbell	38.2	29	-	-	30.9	41	-	-
	Warrnambool	6.7	-	-	-	10	1	-	-

*The release location resides within the receptor boundaries.

Table 12.8 Predicted minimum time to dissolved hydrocarbon exposure and maximum residence time for dissolved hydrocarbon exposure to individual receptors in the 0-10 m depth layer. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer						Winter					
		Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
AMP	Apollo	7.13	-	-	0.04	-	-	3.33	-	-	0.08	-	-
BIA	Antipodean Albatross - Foraging*	1.00	-	-	0.25	-	-	0.88	-	-	0.25	-	-
	Australasian Gannet - Foraging	6.21	-	-	0.08	-	-	9.17	-	-	0.08	-	-
	Black-browed Albatross - Foraging*	1.00	-	-	0.25	-	-	0.88	-	-	0.25	-	-
	Bullers Albatross - Foraging*	1.00	-	-	0.25	-	-	0.88	-	-	0.25	-	-
	Campbell Albatross - Foraging*	1.00	-	-	0.25	-	-	0.88	-	-	0.25	-	-
	Common Diving-petrel - Foraging*	1.00	8.38	-	0.25	-	-	0.88	8.54	-	0.29	-	-
	Indian Yellow-nosed Albatross - Foraging*	1.00	-	-	0.25	-	-	0.88	-	-	0.25	-	-
	Pygmy Blue Whale - Distribution*	1.00	8.38	-	0.25	-	-	0.88	8.54	-	0.29	-	-
	Pygmy Blue Whale - Foraging*	1.00	8.38	-	0.25	-	-	0.88	8.54	-	0.29	-	-
	Pygmy Blue Whale - Foraging annual high use area*	1.00	8.38	-	0.25	-	-	0.88	8.54	-	0.29	-	-
	Pygmy Blue Whale - Known Foraging Area	7.13	-	-	0.08	-	-	3.42	-	-	0.13	-	-
	Short-tailed Shearwater - Foraging	2.58	-	-	0.13	-	-	2.08	-	-	0.25	-	-
	Shy Albatross - Foraging*	1.00	8.38	-	0.25	-	-	0.88	8.54	-	0.29	-	-
	Southern Right Whale - Aggregation*	1.33	-	-	0.17	-	-	1.13	-	-	0.21	-	-
	Southern Right Whale - Known Core Range*	1.00	8.38	-	0.25	-	-	0.88	8.54	-	0.29	-	-
	Wandering Albatross - Foraging*	1.00	-	-	0.25	-	-	0.88	-	-	0.25	-	-
	Wedge-tailed Shearwater - Foraging*	1.00	8.38	-	0.25	-	-	0.88	8.54	-	0.29	-	-
	White Shark - Distribution*	1.00	-	-	0.25	-	-	0.88	-	-	0.25	-	-
	White Shark - Foraging	2.54	-	-	0.08	-	-	6.96	-	-	0.08	-	-
	White-faced Storm-petrel - Foraging	7.29	-	-	0.08	-	-	3.58	-	-	0.08	-	-
IBRA	Otway Plain	3.96	-	-	0.08	-	-	7.00	-	-	0.13	-	-
	Otway Ranges	2.58	-	-	0.13	-	-	4.67	-	-	0.17	-	-
	Warrnambool Plain	2.08	13.92	-	0.25	-	-	2.29	15.58	-	0.29	-	-

Receptor		Summer						Winter					
		Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
IMCRA	Central Bass Strait	8.88	-	-	0.08	-	-	3.88	-	-	0.08	-	-
	Central Victoria	7.13	-	-	0.08	-	-	3.42	-	-	0.13	-	-
	Otway*	1.00	8.38	-	0.25	-	-	0.88	8.54	-	0.29	-	-
KEF	Bonney Coast Upwelling	6.21	-	-	0.08	-	-	11.67	-	-	0.08	-	-
MNP	Twelve Apostles	2.42	22.33	-	0.21	-	-	2.13	8.54	-	0.21	-	-
RSB	Bravenes Rock	28.33	-	-	0.04	-	-	18.38	-	-	0.04	-	-
Nearshore Waters	Colac Otway	3.96	-	-	0.08	-	-	6.54	-	-	0.13	-	-
	Corangamite	2.58	13.92	-	0.25	-	-	2.50	-	-	0.29	-	-
	Lady Julia Percy Island	-	-	-	-	-	-	13.58	-	-	0.04	-	-
	Moyne	2.08	-	-	0.13	-	-	2.29	-	-	0.17	-	-
	Warrnambool	-	-	-	-	-	-	5.96	-	-	0.04	-	-
State Waters	Victoria State Waters	1.50	8.38	-	0.25	-	-	1.17	8.54	-	0.29	-	-
Nearshore Waters (Sub-LGA)	Apollo Bay	13.5	-	-	0.04	-	-	12.63	-	-	0.04	-	-
	Bay of Islands	2.08	-	-	0.13	-	-	2.29	-	-	0.17	-	-
	Cape Otway West	3.96	-	-	0.08	-	-	6.54	-	-	0.13	-	-
	Childers Cove	18.08	-	-	0.04	-	-	3.29	-	-	0.08	-	-
	Moonlight Head	2.58	13.92	-	0.25	-	-	2.13	15.58	-	0.29	-	-
	Port Campbell	3.50	-	-	0.13	-	-	2.50	-	-	0.17	-	-
	Warrnambool	-	-	-	-	-	-	18.67	-	-	0.04	-	-

*The release location resides within the receptor boundaries.

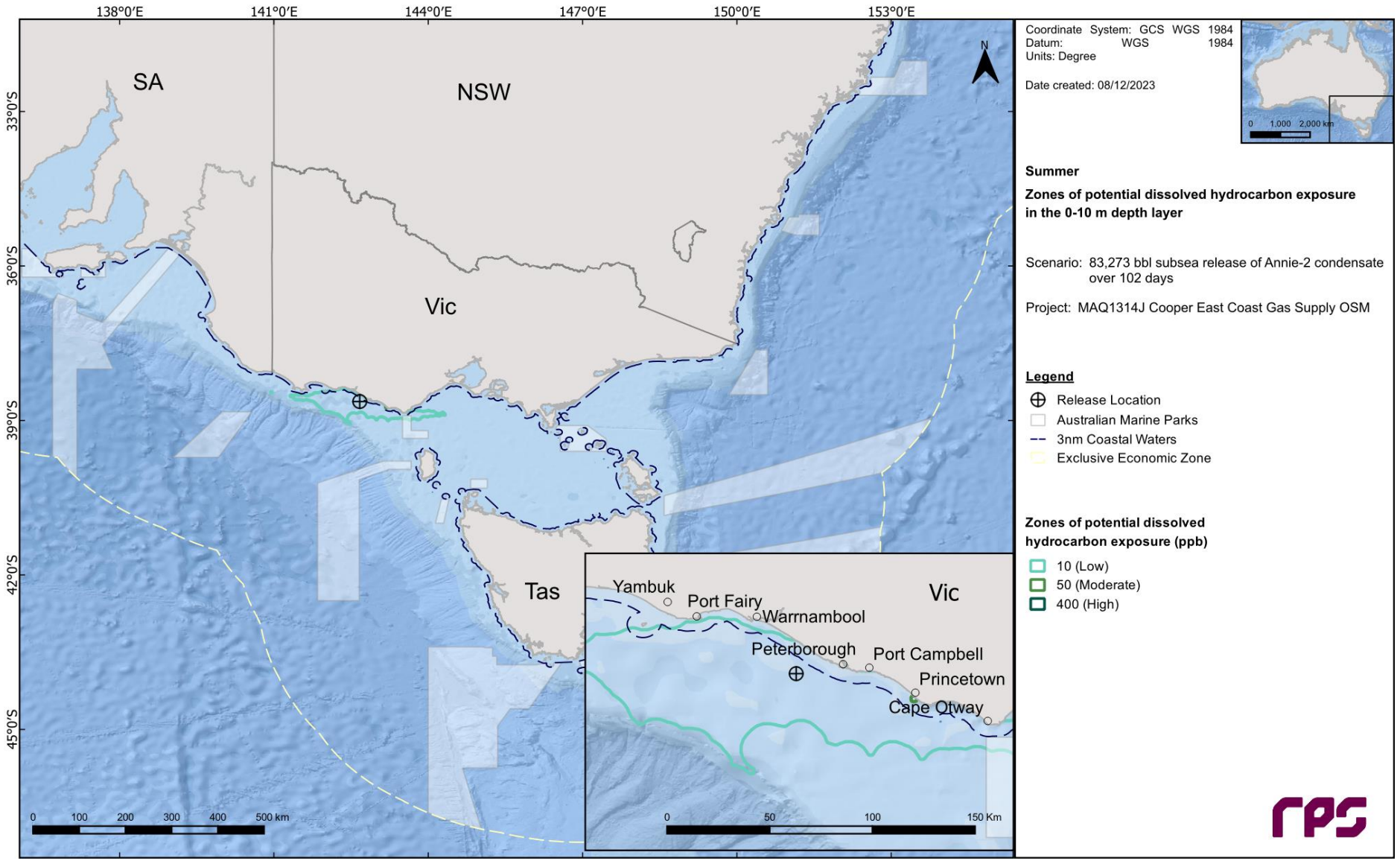

Figure 12.9 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

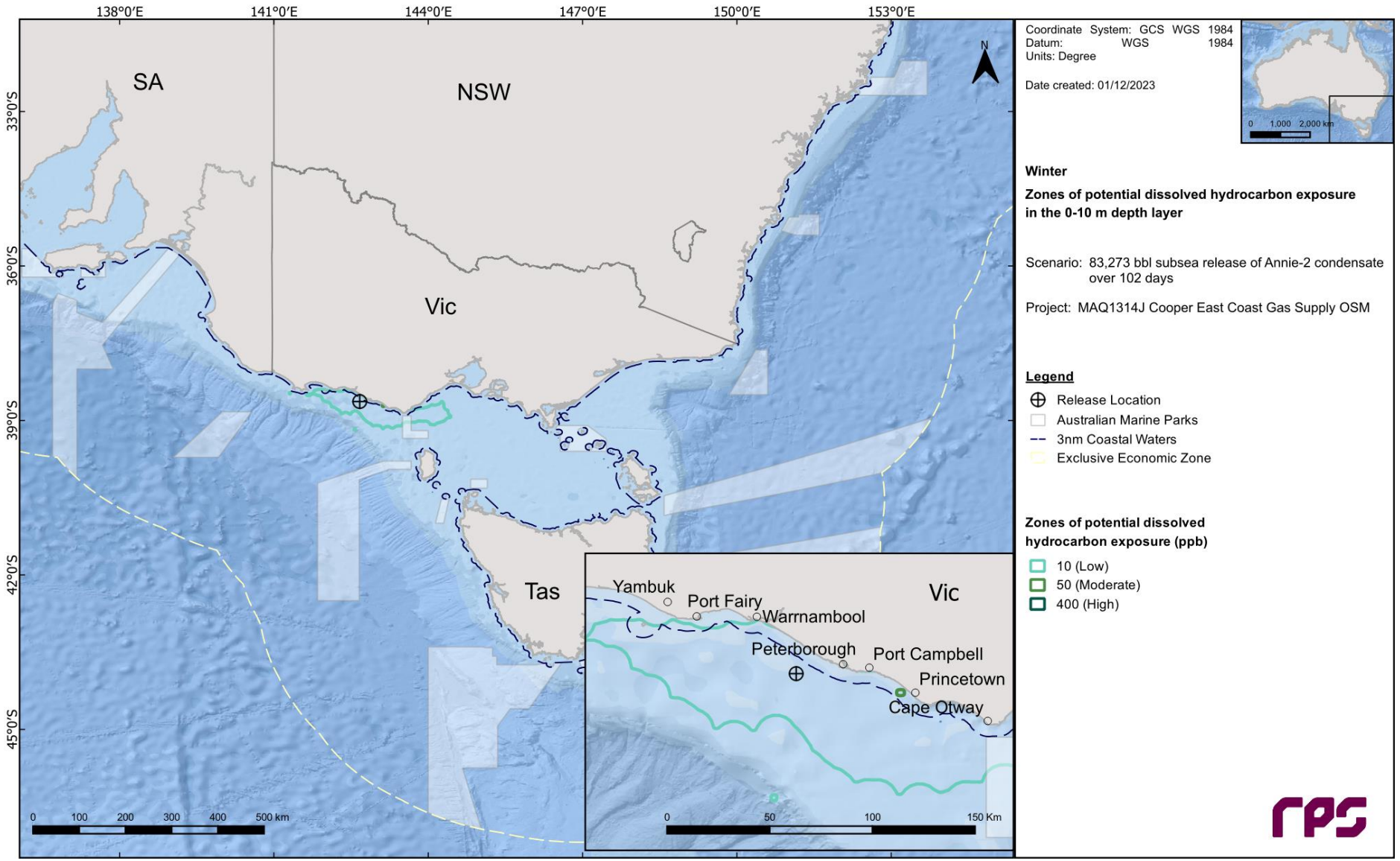

Figure 12.10 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

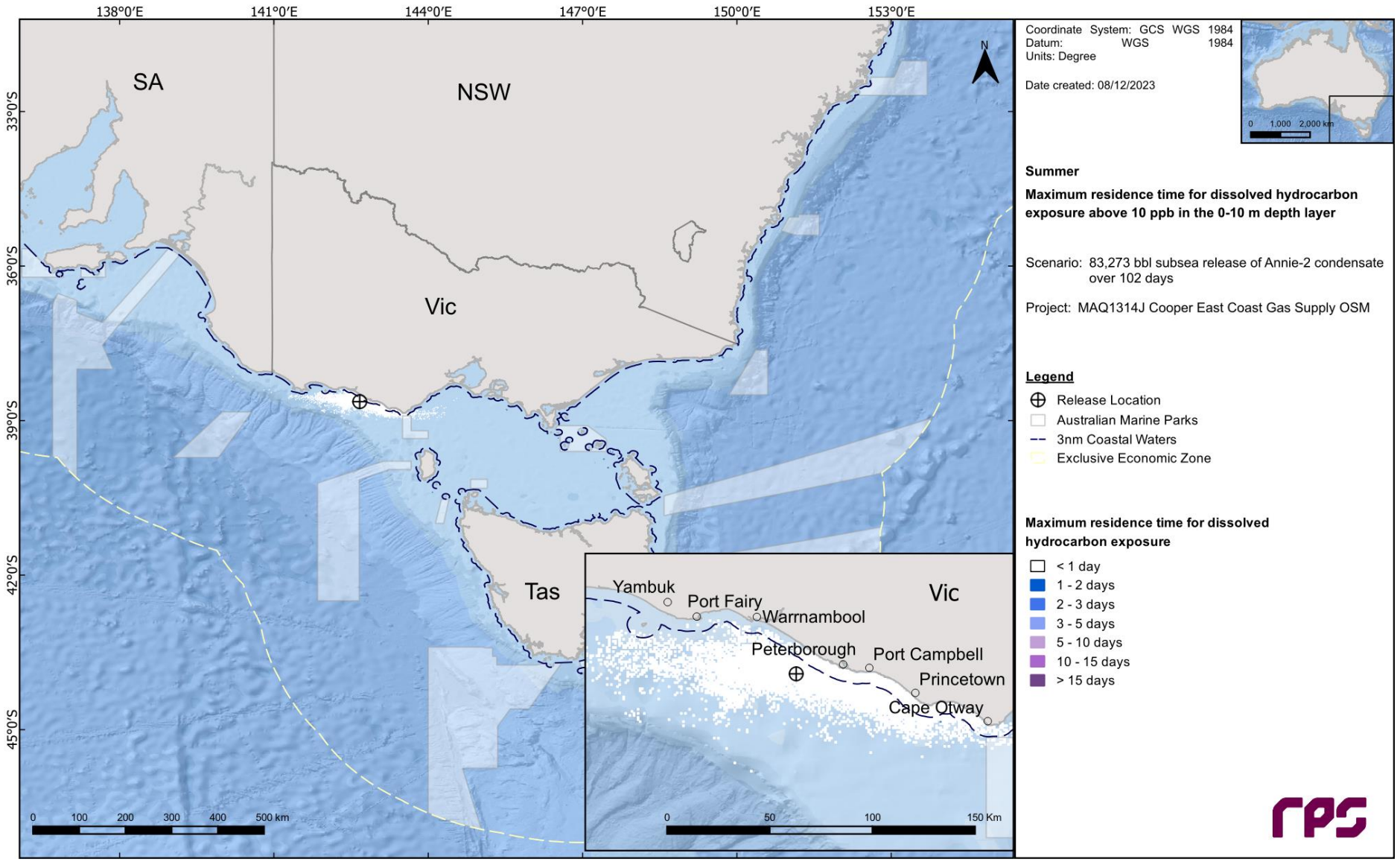

Figure 12.11 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

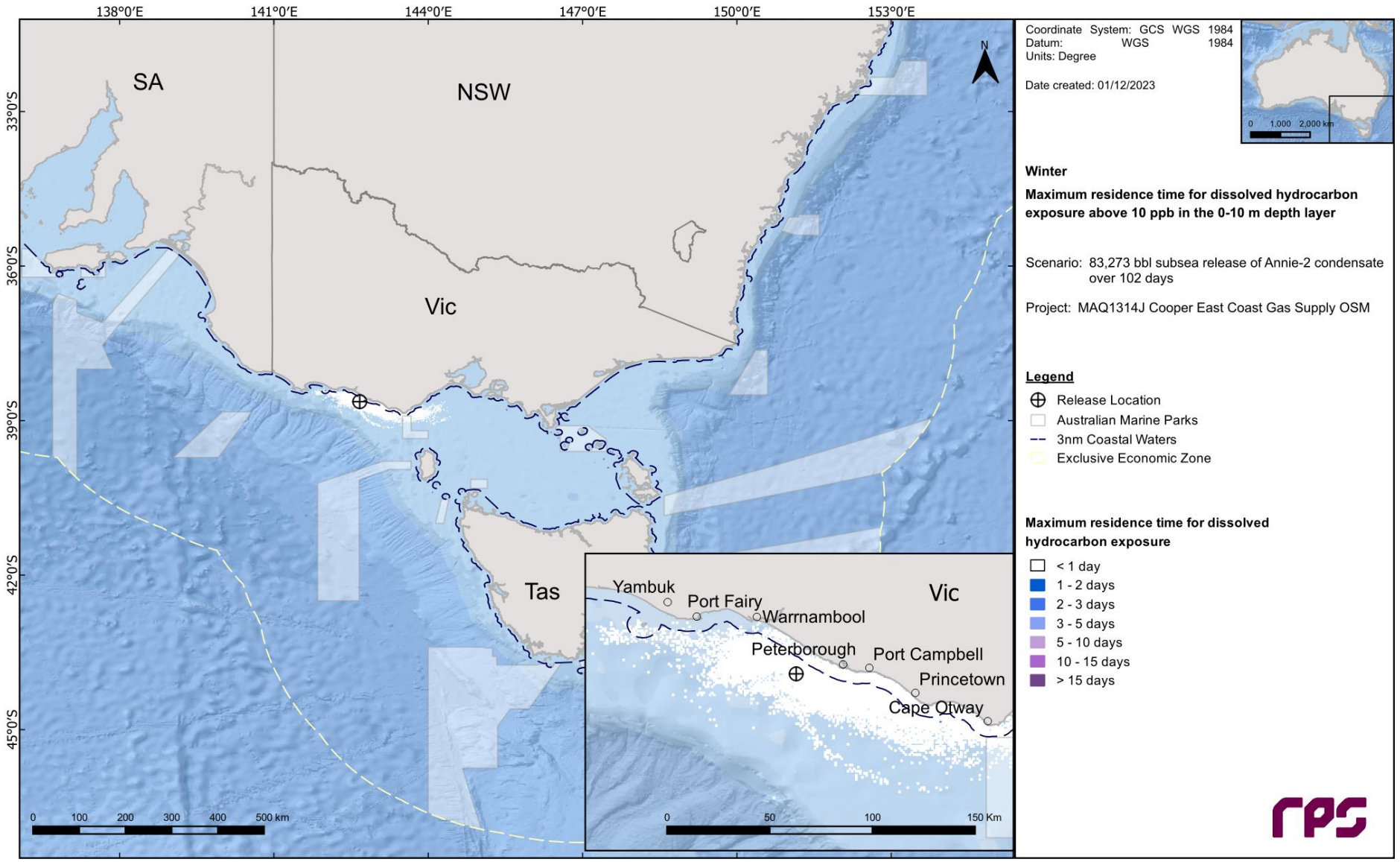

Figure 12.12 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

12.1.3.2 Entrained Hydrocarbons

Table 12.9 summarises the potential in-water exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer.

Many receptors were exposed above the low and high thresholds, however most of these receptors (predominantly BIAs) coincided with the release location.

In summer conditions, the highest probability of low entrained hydrocarbon exposure was recorded at 100% for receptors that the release location doesn't reside within, including Southern Right Whale – Aggregation BIA and Warrnambool Plain IBRA. Additional receptors including sub-LGAs, and AMPs were predicted with entrained hydrocarbon exposure (refer to Table 11.9). Similarly, during winter several receptors that the release location doesn't reside within revealed probabilities of 100% for low entrained hydrocarbon exposure.

Table 12.10 presents the predicted minimum time to entrained hydrocarbon exposure and maximum residence time for entrained hydrocarbon exposure to individual receptors in the 0-10 m depth layer, for all thresholds assessed.

Figure 12.13 and Figure 12.14 present the zones of potential entrained hydrocarbon exposure for the 0-10 m depth layer for each season whilst Figure 12.15 to Figure 12.18 present the maximum residence time of entrained hydrocarbon exposure for the NOPSEMA thresholds.

Table 12.9 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
AMP	Apollo	165.5	82	16	216.7	93	31
	Beagle	36.8	39	-	37.1	59	-
	East Gippsland	11.0	3	-	10.3	1	-
	Franklin	11.7	3	-	9.2	-	-
	Nelson	18.9	6	-	16.1	3	-
	Zeehan	33.8	15	-	19.1	7	-
BIA	Antipodean Albatross - Foraging*	940.7	100	100	1,534.8	100	100
	Australasian Gannet - Foraging	148.6	72	19	243	77	5
	Australian Sea Lion - Foraging	17.0	20	-	11.9	1	-
	Black Petrel - Foraging	25.1	4	-	15.3	6	-
	Black-browed Albatross - Foraging*	940.7	100	100	1,534.8	100	100
	Black-faced Cormorant - Foraging	19.1	10	-	18.7	7	-
	Bullers Albatross - Foraging*	940.7	100	100	1,534.8	100	100
	Campbell Albatross - Foraging*	940.7	100	100	1,534.8	100	100
	Common Diving-petrel - Foraging*	940.7	100	100	1,534.8	100	100
	Crested Tern - Breeding	14.3	4	-	13.4	6	-
	Crested Tern - Foraging	16.0	4	-	15.3	6	-
	Flesh-footed Shearwater - Foraging	25.1	4	-	15.3	6	-
	Great-winged Petrel - Foraging	25.1	3	-	12.4	6	-
	Grey Nurse Shark - Foraging	24.6	12	-	14.7	12	-
	Grey Nurse Shark - Migration	41.4	14	-	16.3	14	-
	Humpback Whale - Foraging	42.6	14	-	18.4	14	-
	Indian Yellow-nosed Albatross - Foraging*	940.7	100	100	1,534.8	100	100
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	16.8	11	-	13.4	6	-
	Little Penguin - Breeding	14.5	4	-	14.5	6	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Little Penguin - Foraging	33.0	47	-	45.1	73	-
	Northern Giant Petrel - Foraging	25.1	3	-	12.4	6	-
	Pygmy Blue Whale - Distribution*	940.7	100	100	1,534.8	100	100
	Pygmy Blue Whale - Foraging*	940.7	100	100	1,534.8	100	100
	Pygmy Blue Whale - Foraging annual high use area*	940.7	100	100	1,534.8	100	100
	Pygmy Blue Whale - Known Foraging Area	180.1	81	16	208.6	93	31
	Short-tailed Shearwater - Foraging	300.8	98	90	379.4	100	100
	Shy Albatross - Foraging*	940.7	100	100	1,534.8	100	100
	Soft-plumaged Petrel - Foraging	10.1	1	-	7.4	-	-
	Sooty Shearwater - Foraging	36.1	13	-	16.3	14	-
	Southern Giant Petrel - Foraging	25.1	3	-	12.4	6	-
	Southern Right Whale - Aggregation	833.2	100	100	1,262.8	100	100
	Southern Right Whale - Connecting Habitat	11.7	2	-	14.8	7	-
	Southern Right Whale - Known Core Range*	940.7	100	100	1,534.8	100	100
	Wandering Albatross - Foraging*	940.7	100	100	1,534.8	100	100
	Wedge-tailed Shearwater - Foraging*	940.7	100	100	1,534.8	100	100
	White Shark - Breeding	23.3	37	-	28.4	56	-
	White Shark - Distribution*	940.7	100	100	1,534.8	100	100
	White Shark - Foraging	218.7	87	34	243	79	24
	White-capped Albatross - Foraging	25.1	3	-	12.4	6	-
	White-faced Storm-petrel - Breeding	25.1	8	-	15.3	7	-
	White-faced Storm-petrel - Foraging	153.7	81	11	208.6	93	23
	Wilsons Storm Petrel - Migration	25.1	3	-	12.4	6	-
IBRA	Bateman	11.4	3	-	11.6	4	-
	Bridgewater	113.5	52	8	104.1	20	2
	East Gippsland Lowlands	17.4	7	-	12.3	9	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Flinders	23.7	20	-	31.4	21	-
	Gippsland Plain	65.3	41	-	77.0	66	-
	Glenelg Plain	148.6	53	11	108.5	22	2
	King Island	11.7	1	-	14.8	7	-
	Otway Plain	260	94	58	252	98	82
	Otway Ranges	209.7	97	65	259.5	100	92
	Strzelecki Ranges	30.4	40	-	35.5	65	-
	Tasmanian West	10.0	1	-	7.1	-	-
	Warrnambool Plain	513.7	100	98	626.6	100	100
	Wilsons Promontory	72.4	43	-	81.4	69	-
IMCRA	Batemans Shelf	20	7	-	15.3	7	-
	Central Bass Strait	135.9	76	11	204.1	91	17
	Central Victoria	149.6	80	13	208.6	93	25
	Coorong	10.9	1	-	9.0	-	-
	Flinders	73.3	43	-	82.9	69	-
	Franklin	10.6	1	-	8.0	-	-
	Otway*	940.7	100	100	1,534.8	100	100
	Twofold Shelf	42.6	21	-	29.2	28	-
	Victorian Embayments	31.8	27	-	30.6	50	-
KEF	Big Horseshoe Canyon	11.7	2	-	9.9	-	-
	Bonney Coast Upwelling	148.6	73	19	243	53	7
	Canyons on the Eastern Continental Slope	25.1	2	-	9.1	-	-
	Shelf rocky reefs	13.9	4	-	13.4	6	-
	Upwelling East of Eden	42.6	18	-	20.6	21	-
	West Tasmania Canyons	44.6	23	-	38.3	14	-
MNP	Bunurong	33.8	29	-	32.1	52	-
	Cape Howe	18.9	12	-	13.3	8	-
	Churchill Island	23.8	10	-	20.0	12	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Discovery Bay	51.1	47	-	41.9	13	-
	Point Addis	57.4	28	-	58.6	39	-
	Point Hicks	11.3	3	-	11.1	4	-
	Port Phillip Heads	33.0	25	-	37.0	29	-
	Twelve Apostles	455.9	99	98	572.8	100	100
	Wilsons Promontory	73.3	43	-	82.9	69	-
MP	Batemans	14.3	4	-	13.4	6	-
	Lower South East	26.5	15	-	27.3	4	-
	Upper South East	12.8	2	-	4.4	-	-
MS	Mushroom Reef	19.2	22	-	24.2	48	-
NPS4	Bunurong Marine Park	40.2	31	-	48.1	49	-
	Wilsons Promontory Marine Park	64.3	41	-	75.2	61	-
RAMSAR	Port Phillip Bay Western Shoreline and Bellarine Peninsula	23.6	17	-	23.3	10	-
	Western Port	23.8	10	-	22.3	25	-
RSB	Bell Reef	11.0	1	-	7.2	-	-
	Bravenes Rock	181.0	91	41	177.2	98	55
	Cody Bank	21.3	40	-	29.6	61	-
	Cutter Rock	26.8	24	-	33.6	18	-
	New Zealand Star Bank	20.0	11	-	14.4	13	-
Nearshore Waters	Anser Island	62.4	43	-	67.1	67	-
	Bass Coast	40.2	31	-	52.2	53	-
	Bega Valley	16.8	6	-	11.6	5	-
	Colac Otway	260.0	96	58	259.5	100	82
	Corangamite	522.4	100	97	572.8	100	100
	Curtis Island	23.7	11	-	31.4	10	-
	East Gippsland	17.4	6	-	12.2	7	-
	French Island	8.3	-	-	13.3	5	-
	Gabo Island	17.1	7	-	12.3	9	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Glenelg	146.4	53	11	108.5	22	2
	Glennie Group	66.3	43	-	73.3	69	-
	Grant	36.7	23	-	35.9	5	-
	Greater Geelong	57.8	24	-	58.3	16	-
	Hogan Island Group	22.4	20	-	28.9	21	-
	Kanowna Island	58.5	43	-	63.1	66	-
	King Island	11.7	1	-	14.8	7	-
	Lady Julia Percy Island	134.8	64	19	243.0	44	5
	Laurence Rocks	108.3	53	4	90.1	22	-
	Moncoeur Islands	35.0	39	-	27.6	52	-
	Montague Island	11.4	3	-	11.6	4	-
	Mornington Peninsula	42.6	31	-	37.5	53	-
	Moyne	508.9	100	98	626.6	100	95
	Mud Island	14.8	10	-	16.2	4	-
	Norman Island	72.4	42	-	80.8	69	-
	Phillip Island	28.9	31	-	33.6	58	-
	Robe	10.9	1	-	3.2	-	-
	Rodondo Island	45.9	41	-	44.8	60	-
	Seal Islands	8.7	-	-	13.9	15	-
	Shellback Island	52.9	41	-	66.4	60	-
	Skull Rock	54.0	42	-	60.8	66	-
	South Gippsland	69.1	43	-	79.2	68	-
	Surf Coast	56.7	31	-	56.3	55	-
	Warrnambool	257.7	95	29	310.5	62	23
	Wattle Range	14.4	4	-	14.4	3	-
	West Coast	10.0	1	-	7.1	-	-
State Waters	New South Wales	16.8	11	-	13.4	6	-
	South Australia State Waters	40.1	26	-	38.7	5	-
	Tasmania State Waters	29.2	21	-	35.0	26	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Victoria State Waters	640.5	100	100	626.6	100	100
Nearshore Waters (Sub-LGA)	Anglesea	42.6	20	-	43.0	25	-
	Apollo Bay	153.7	84	10	108.8	93	3
	Bay of Islands	508.9	100	98	626.6	100	95
	Bega Valley	16.8	6	-	11.6	5	-
	Cape Howe / Mallacoota	17.4	6	-	12.2	7	-
	Cape Liptrap – Northwest	36.9	40	-	45.9	66	-
	Cape Nelson	146.4	53	11	108.5	22	2
	Cape Otway West	260	96	59	259.5	100	84
	Cape Patton	84.3	70	-	79.2	89	-
	Childers Cove	320.9	100	60	313.1	87	31
	Croajingolong - East	10.6	1	-	10.5	1	-
	Croajingolong - West	10.2	1	-	10.0	1	-
	Discovery Bay - East	46.3	36	-	39.3	11	-
	Discovery Bay - West	28.5	28	-	28.6	5	-
	French Island - East	5.4	-	-	13.2	2	-
	French Island / Crib Point	8.1	-	-	13.6	8	-
	French Island / San Remo	23.5	21	-	25.2	35	-
	Kilcunda	39.6	29	-	52.1	53	-
	Lorne	42.0	38	-	41.6	62	-
	Moonlight Head	455.9	99	97	572.8	100	100
	Mornington Peninsula - South	30.0	31	-	27.1	50	-
	Mornington Peninsula - Southwest	42.6	30	-	37.5	52	-
	Point Hicks	10.1	1	-	10.7	4	-
	Port Campbell	522.4	100	97	482.4	100	96
	Port Fairy	187.1	67	8	200.1	41	5
	Port Phillip - Queenscliff	42.7	24	-	42.5	16	-
	Port Phillip - Sorrento Shore	36.2	26	-	37.0	41	-
	Port Phillip Heads	30.5	21	-	27.4	13	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Portland Bay - East	79.3	59	-	94.7	32	-
	Portland Bay - West	91.1	47	-	84.7	18	-
	Torquay	57.8	22	-	58.3	18	-
	Venus Bay	40.2	31	-	52.2	53	-
	Waratah Bay	30.4	40	-	35.5	65	-
	Warrnambool	213.4	82	12	197.1	57	16
	Westernport	18.0	16	-	22.3	47	-
	Wilsons Promontory - East	42.3	42	-	46.1	64	-
	Wilsons Promontory - West	69.1	43	-	79.2	68	-

*The release location resides within the receptor boundaries.

Table 12.10 Predicted minimum time to entrained hydrocarbon exposure and maximum residence time for entrained hydrocarbon exposure to individual receptors in the 0-10 m depth layer. Results are based on an 83,273 bbl (13,239 m^3) subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
AMP	Apollo	2.88	10.67	39.33	0.42	2.63	3.5	24.21	0.58
	Beagle	16.71	-	7.58	-	16.96	-	8	-
	East Gippsland	90.33	-	0.13	-	64.08	-	0.04	-
	Franklin	64.92	-	0.08	-	-	-	-	-
	Nelson	16.63	-	1.96	-	80.13	-	1.25	-
	Zeehan	14.21	-	7.13	-	16.08	-	3.08	-
BIA	Antipodean Albatross – Foraging*	0.04	0.08	101.71	24.83	0.04	0.04	109.29	21.88
	Australasian Gannet – Foraging	2.33	7.04	89.83	6.63	5.42	9.25	99.83	3.08
	Australian Sea Lion – Foraging	10.13	-	0.63	-	75.33	-	0.08	-
	Black Petrel – Foraging	60.13	-	1.63	-	63.67	-	0.75	-
	Black-browed Albatross – Foraging*	0.04	0.08	101.88	24.83	0.04	0.04	109.29	26.29
	Black-faced Cormorant – Foraging	23.33	-	2.08	-	17.79	-	0.54	-
	Bullers Albatross – Foraging*	0.04	0.08	101.88	24.83	0.04	0.04	109.29	26.29
	Campbell Albatross – Foraging*	0.04	0.08	101.88	24.83	0.04	0.04	109.29	26.29
	Common Diving-petrel – Foraging*	0.04	0.08	109.38	35.46	0.04	0.04	112.54	42.17
	Crested Tern – Breeding	85.25	-	0.58	-	64.13	-	0.33	-
	Crested Tern – Foraging	60.63	-	1	-	63.67	-	0.75	-
	Flesh-footed Shearwater – Foraging	60.13	-	1.63	-	63.67	-	0.75	-
	Great-winged Petrel – Foraging	60.13	-	1.63	-	65.21	-	0.08	-
	Grey Nurse Shark – Foraging	57.46	-	1.42	-	33.54	-	0.33	-
	Grey Nurse Shark – Migration	29.83	-	1.79	-	33.50	-	0.75	-
	Humpback Whale – Foraging	29.50	-	1.79	-	32.75	-	0.75	-
	Indian Yellow-nosed Albatross – Foraging*	0.04	0.08	101.88	24.83	0.04	0.04	109.29	26.29

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Indo-Pacific/Spotted Bottlenose Dolphin – Breeding	57.08	-	1.92	-	33.71	-	0.33	-
	Little Penguin – Breeding	85.13	-	1	-	64.08	-	0.75	-
	Little Penguin – Foraging	15.42	-	12	-	10.96	-	25.63	-
	Northern Giant Petrel – Foraging	60.13	-	1.63	-	65.21	-	0.08	-
	Pygmy Blue Whale – Distribution*	0.04	0.08	109.38	35.46	0.04	0.04	112.54	42.17
	Pygmy Blue Whale – Foraging*	0.04	0.08	109.38	35.46	0.04	0.04	112.54	42.17
	Pygmy Blue Whale – Foraging annual high use area*	0.04	0.08	109.38	35.46	0.04	0.04	112.54	42.17
	Pygmy Blue Whale – Known Foraging Area	2.42	6.71	54.83	1.21	2.29	3.63	46.42	1.13
	Short-tailed Shearwater – Foraging	1.58	4.13	99.71	24.25	1.13	2.38	110.54	13.79
	Shy Albatross – Foraging*	0.04	0.08	109.38	35.46	0.04	0.04	112.54	42.17
	Soft-plumaged Petrel – Foraging	82.17	-	0.04	-	-	-	-	-
	Sooty Shearwater – Foraging	30.17	-	1.79	-	44.38	-	0.75	-
	Southern Giant Petrel – Foraging	60.13	-	1.63	-	65.21	-	0.08	-
	Southern Right Whale - Aggregation*	0.04	0.08	89.83	35.46	0.04	0.08	102.58	22.88
	Southern Right Whale – Connecting Habitat	48.04	-	0.08	-	19.88	-	1.08	-
	Southern Right Whale – Known Core Range*	0.04	0.08	109.38	35.46	0.04	0.04	112.54	42.17
	Wandering Albatross – Foraging*	0.04	0.08	101.88	24.83	0.04	0.04	109.29	26.29
	Wedge-tailed Shearwater – Foraging*	0.04	0.08	109.38	35.46	0.04	0.04	112.54	42.17
	White Shark – Breeding	49.42	-	9.38	-	19.38	-	30.75	-
	White Shark – Distribution*	0.04	0.08	101.88	24.83	0.04	0.04	109.29	26.29
	White Shark – Foraging	1.25	3	89.83	1.92	2.13	6.83	99.83	22.88
	White-capped Albatross – Foraging	60.13	-	1.63	-	65.21	-	0.08	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	White-faced Storm-petrel – Breeding	59.50	-	1.63	-	45.38	-	0.75	-
	White-faced Storm-petrel – Foraging	2.50	10.79	54.46	0.42	2.79	4	46.42	1.13
	Wilsons Storm Petrel – Migration	60.13	-	1.63	-	65.21	-	0.08	-
IBRA	Bateman	85.42	-	0.08	-	64.38	-	0.04	-
	Bridgewater	5.38	26.46	61.63	1.38	19.75	99.46	44.58	0.04
	East Gippsland Lowlands	53.63	-	2.42	-	40.38	-	0.17	-
	Flinders	20.63	-	4.5	-	18.54	-	3.08	-
	Gippsland Plain	15.63	-	28.92	-	11.42	-	50.67	-
	Glenelg Plain	4.63	8.71	78.42	5.88	19.38	99.04	48.58	0.13
	King Island	35.42	-	0.08	-	19.88	-	1.08	-
	Otway Plain	2.21	7.29	85.25	23.38	2.25	2.88	83.08	13.71
	Otway Ranges	1.88	6.42	99.71	12.54	1.92	5.42	101.92	9.13
	Strzelecki Ranges	15.71	-	16.38	-	19.08	-	18.42	-
	Tasmanian West	89.42	-	0.04	-	-	-	-	-
	Warrnambool Plain	0.83	1.33	99.63	35.21	0.63	1.29	111.08	41.79
	Wilsons Promontory	13.83	-	53.54	-	10.88	-	69.54	-
IMCRA	Batemans Shelf	59.58	-	1	-	45.58	-	0.75	-
	Central Bass Strait	3.38	11.79	21.54	0.38	2.92	3.71	21.75	1.13
	Central Victoria	2.88	10.79	46.54	0.42	2.79	3.63	46.42	0.54
	Coorong	23.75	-	0.04	-	-	-	-	-
	Flinders	13.08	-	53.83	-	10.29	-	69.54	-
	Franklin	82.17	-	0.04	-	-	-	-	-
	Otway*	0.04	0.08	109.38	35.46	0.04	0.04	112.54	42.17
	Twofold Shelf	17.63	-	5.17	-	17.58	-	3.67	-
	Victorian Embayments	31.58	-	10.83	-	15.04	-	16.92	-
KEF	Big Horseshoe Canyon	55.88	-	0.04	-	-	-	-	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Bonney Coast Upwelling	2.13	7.04	89.83	6.63	6.63	8.92	99.83	4.25
	Canyons on the Eastern Continental Slope	60.17	-	1.38	-	-	-	-	-
	Shelf rocky reefs	85.00	-	0.42	-	64.00	-	0.33	-
	Upwelling East of Eden	29.42	-	3	-	32.58	-	2.96	-
	West Tasmania Canyons	12.13	-	11.42	-	12.25	-	2.75	-
MNP	Bunurong	16	-	8.5	-	17.04	-	13.13	-
	Cape Howe	53.54	-	2.38	-	40.50	-	0.21	-
	Churchill Island	50.08	-	5.58	-	32.29	-	9.71	-
	Discovery Bay	5.58	-	8.88	-	28.00	-	7	-
	Point Addis	29.13	-	41.67	-	12.75	-	41.83	-
	Point Hicks	77.96	-	0.04	-	54.29	-	0.08	-
	Port Phillip Heads	31.58	-	10.79	-	20.88	-	14	-
	Twelve Apostles	1.25	1.79	109.38	31.04	0.92	1.38	112.54	42.17
	Wilsons Promontory	14	-	53.83	-	10.67	-	69.46	-
MP	Batemans	85.25	-	0.58	-	64.13	-	0.33	-
	Lower South East	15.67	-	4.29	-	56.96	-	11.54	-
	Upper South East	27.21	-	0.08	-	-	-	-	-
MS	Mushroom Reef	36.08	-	8.38	-	15.79	-	3.79	-
NPS4	Bunurong Marine Park	16.92	-	9.63	-	16.75	-	12.42	-
	Wilsons Promontory Marine Park	16.29	-	28.92	-	19.38	-	51.33	-
RAMSAR	Port Phillip Bay Western Shoreline and Bellarine Peninsula	32.67	-	8.17	-	21.42	-	9.21	-
	Western Port	50.08	-	5.58	-	17.5	-	10.63	-
RSB	Bell Reef	92.21	-	0.04	-	-	-	-	-
	Bravenes Rock	1.83	6.21	89.63	1.13	1.71	6.13	84.67	1.54
	Cody Bank	14.79	-	2.54	-	17.5	-	4.17	-
	Cutter Rock	44.08	-	1.75	-	16.96	-	2.21	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	New Zealand Star Bank	52.92	-	2.13	-	39.08	-	1.17	-
Nearshore Waters	Anser Island	16.88	-	52.83	-	16.92	-	65.25	-
	Bass Coast	16.92	-	12	-	16.13	-	21.25	-
	Bega Valley	78.88	-	1.79	-	41.42	-	0.08	-
	Colac Otway	2.17	7.29	85.25	23.38	2.13	2.88	94.04	13.71
	Corangamite	0.79	1.50	99.71	30.88	0.63	1.63	111.08	41.79
	Curtis Island	44.17	-	1	-	18.83	-	1.13	-
	East Gippsland	78.79	-	2	-	40.54	-	0.17	-
	French Island	-	-	-	-	43.21	-	0.17	-
	Gabo Island	53.63	-	2.33	-	40.42	-	0.17	-
	Glenelg	4.63	8.71	78.42	5.88	19.38	99.04	87.17	0.13
	Glennie Group	16.13	-	53.54	-	11.00	-	65.83	-
	Grant	18.42	-	5.58	-	56.33	-	12.17	-
	Greater Geelong	29.83	-	19.63	-	14.17	-	21.38	-
	Hogan Island Group	20.63	-	4.5	-	18.54	-	3.08	-
	Kanowna Island	14.04	-	52.13	-	14.83	-	62.54	-
	King Island	35.42	-	0.08	-	19.88	-	1.08	-
	Lady Julia Percy Island	3.00	15.71	65.63	1.88	8.96	9.29	97.08	3.08
	Laurence Rocks	4.33	32.63	79.58	0.38	15.29	-	27.29	-
	Moncoeur Islands	17.04	-	8.21	-	17.42	-	6.13	-
	Montague Island	85.42	-	0.08	-	64.38	-	0.04	-
	Mornington Peninsula	31.71	-	10.63	-	11.42	-	11.25	-
	Moyne	0.83	1.33	92.88	29	0.71	1.29	98.92	20.63
	Mud Island	43.04	-	0.96	-	56.50	-	1.25	-
	Norman Island	16.00	-	32.88	-	10.88	-	51.88	-
	Phillip Island	16.08	-	11.38	-	14.83	-	22.75	-
	Robe	30.17	-	0.04	-	-	-	-	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Rodondo Island	13.83	-	15.38	-	15.00	-	13	-
	Seal Islands	-	-	-	-	35.79	-	0.42	-
	Shellback Island	15.96	-	23.17	-	19.29	-	33.5	-
	Skull Rock	14.04	-	52.13	-	14.83	-	55.96	-
	South Gippsland	15.63	-	53.17	-	18.42	-	69.46	-
	Surf Coast	29.71	-	45.92	-	13.17	-	46.29	-
	Warrnambool	2.46	3.29	59.08	9.79	1.83	5.25	101.42	6.38
	Wattle Range	25.46	-	0.29	-	66.25	-	1	-
	West Coast	89.42	-	0.04	-	-	-	-	-
State Waters	New South Wales	57.13	-	1.79	-	33.71	-	0.33	-
	South Australia State Waters	15.08	-	9.38	-	55.29	-	12.58	-
	Tasmania State Waters	18.08	-	5.17	-	17.21	-	4.33	-
	Victoria State Waters	0.29	0.38	109.38	35.46	0.29	0.42	112.54	42.17
Nearshore Waters (Sub-LGA)	Anglesea	29.71	-	39.42	-	13.21	-	41.29	-
	Apollo Bay	2.46	28.25	59.04	4.33	2.33	9.63	31.88	0.17
	Bay of Islands	0.83	1.33	92.88	29	0.71	1.29	84.54	20.63
	Bega Valley	78.88	-	1.79	-	41.42	-	0.08	-
	Cape Howe / Mallacoota	78.83	-	2	-	40.38	-	0.17	-
	Cape Liptrap – Northwest	15.63	-	16.42	-	19.33	-	20.13	-
	Cape Nelson	4.58	8.71	78.42	5.88	19.38	99.04	48.58	0.13
	Cape Otway West	2.17	7.17	85.29	23.67	2.13	2.88	94.04	10.29
	Cape Patton	9.33	-	23.13	-	5.25	-	20.63	-
	Childers Cove	0.92	2.75	55.67	35.21	1.75	2.17	51.21	9.38
	Croajingolong – East	78.83	-	0.04	-	76.04	-	0.04	-
	Croajingolong – West	81.46	-	0.04	-	77.42	-	0.04	-
	Discovery Bay – East	9.42	-	14.25	-	32.46	-	18	-
	Discovery Bay – West	15.92	-	14.29	-	57	-	14.54	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	French Island – East	-	-	-	-	74.5	-	1.33	-
	French Island / Crib Point	-	-	-	-	42.21	-	0.13	-
	French Island / San Remo	35.58	-	6.83	-	16.13	-	16.92	-
	Kilcunda	16.96	-	9.17	-	16.42	-	21.25	-
	Lorne	26.79	-	20	-	13.67	-	14.29	-
	Moonlight Head	1.79	2.33	109.38	27.67	1.21	1.71	111.08	41.79
	Mornington Peninsula – South	34.00	-	10.58	-	14.83	-	6.58	-
	Mornington Peninsula – Southwest	33.79	-	10.63	-	11.42	-	10	-
	Point Hicks	114.54	-	0.04	-	55.04	-	0.04	-
	Port Campbell	0.79	1.5	90.63	30.88	0.63	1.63	87.58	24.58
	Port Fairy	2.75	12.71	80.04	1.58	8.63	12.25	98.92	13.13
	Port Phillip – Queenscliff	29.88	-	19.63	-	15.08	-	20.42	-
	Port Phillip – Sorrento Shore	31.71	-	8.96	-	20.96	-	13.79	-
	Port Phillip Heads	32.54	-	4.08	-	21	-	10.83	-
	Portland Bay – East	6.29	-	68.54	-	9.67	-	96.79	-
	Portland Bay – West	11.33	-	66.96	-	20.29	-	87.17	-
	Torquay	29.79	-	45.92	-	13.38	-	46.29	-
	Venus Bay	16.92	-	12	-	16.75	-	13.17	-
	Waratah Bay	15.71	-	16.38	-	19.08	-	18.42	-
	Warrnambool	2.50	10.67	85.21	4.13	5.08	5.25	101.42	20.17
	Westernport	45.08	-	9.46	-	16.38	-	3.5	-
	Wilsons Promontory – East	25.08	-	26.21	-	18.75	-	50.58	-
	Wilsons Promontory – West	16.21	-	53.17	-	18.42	-	69.46	-

*The release location resides within the receptor boundaries.

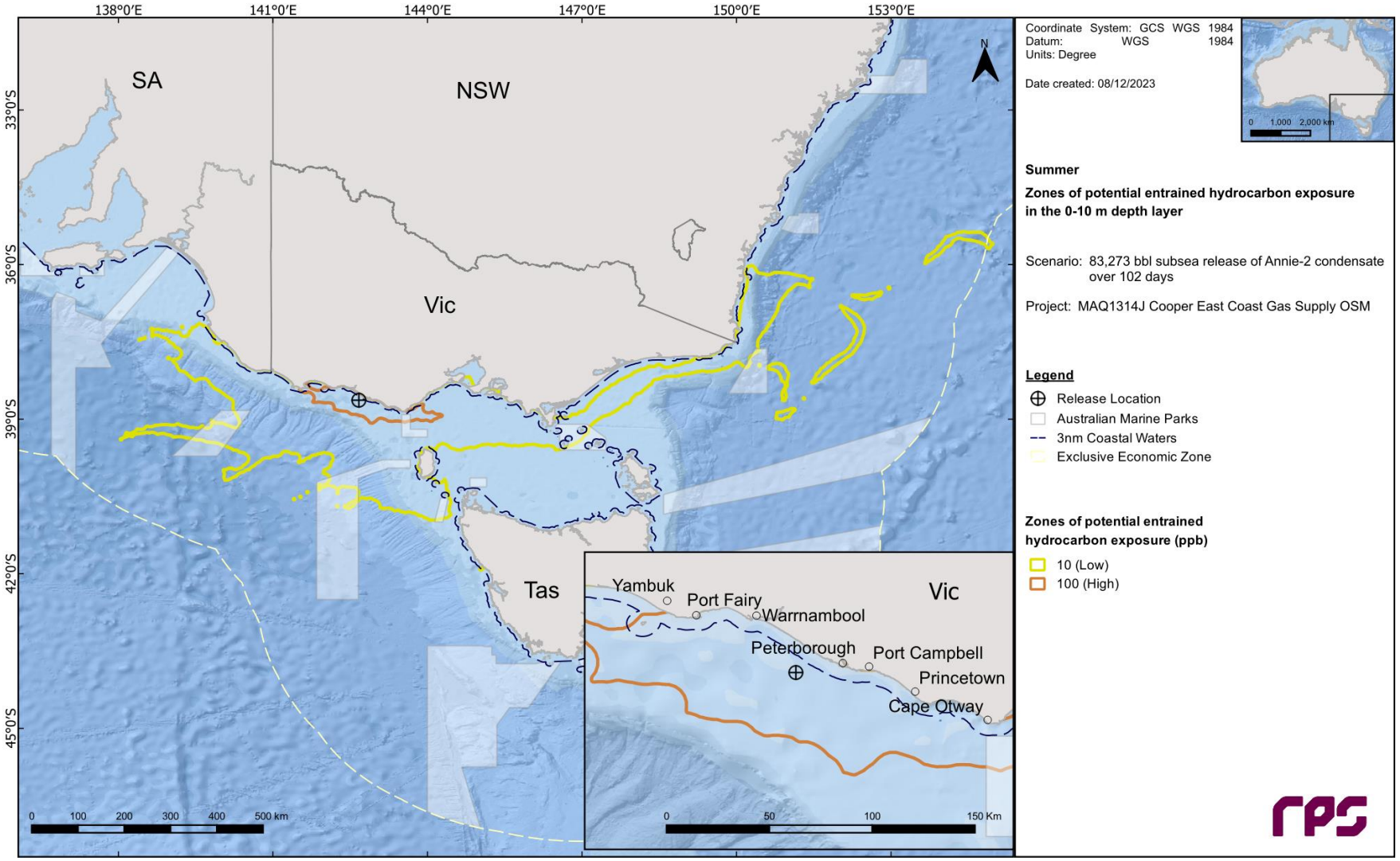

Figure 12.13 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

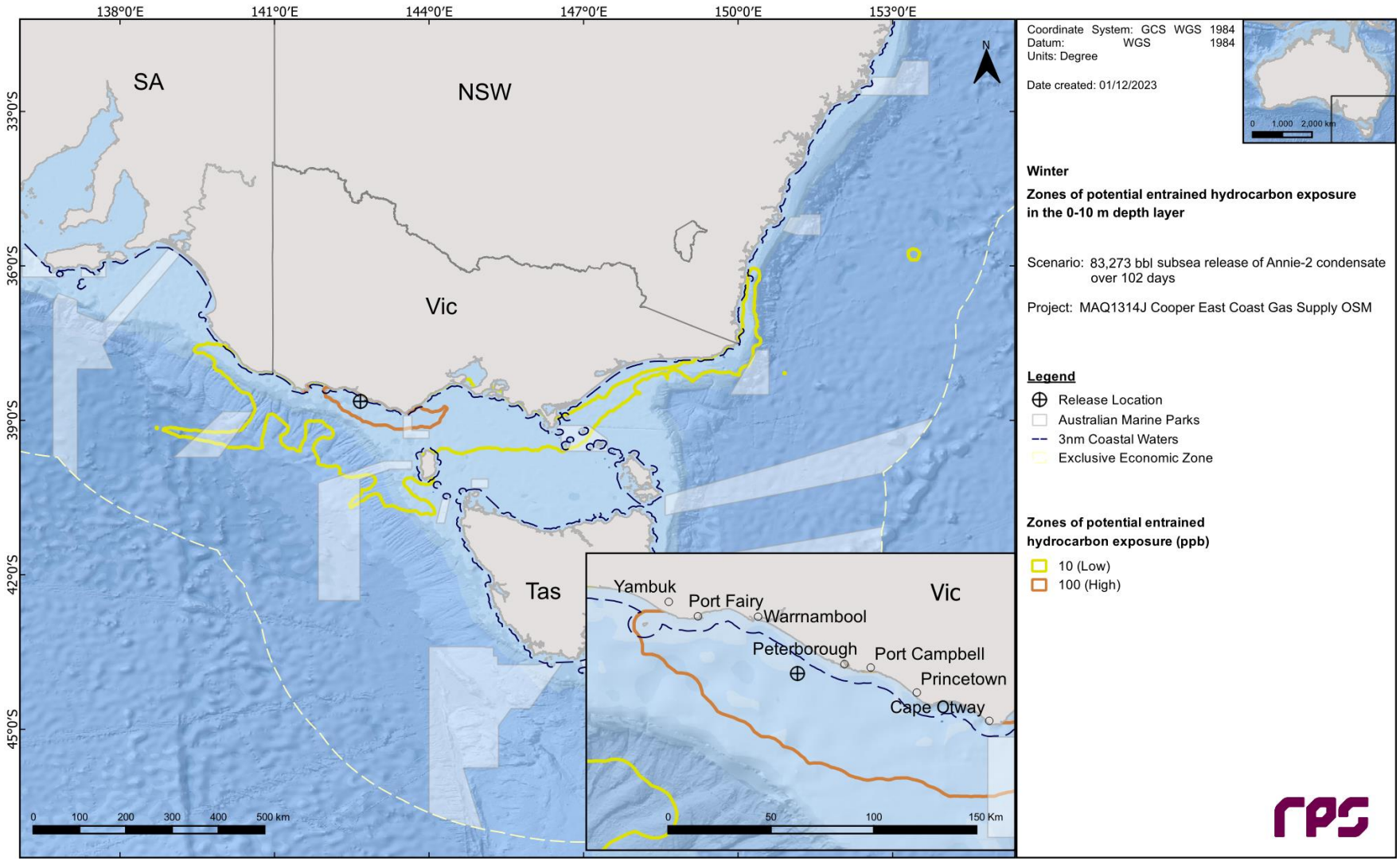

Figure 12.14 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

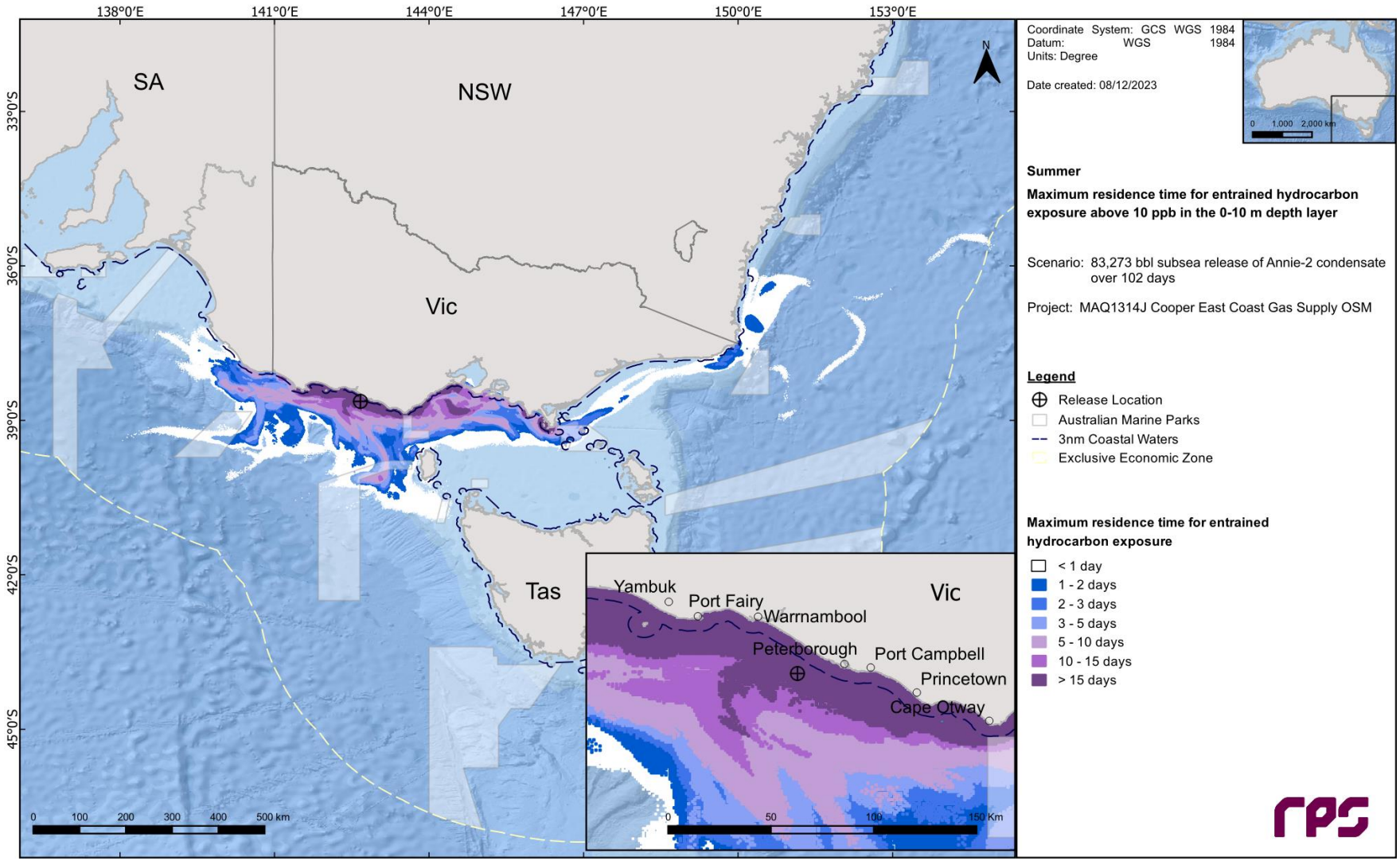

Figure 12.15 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

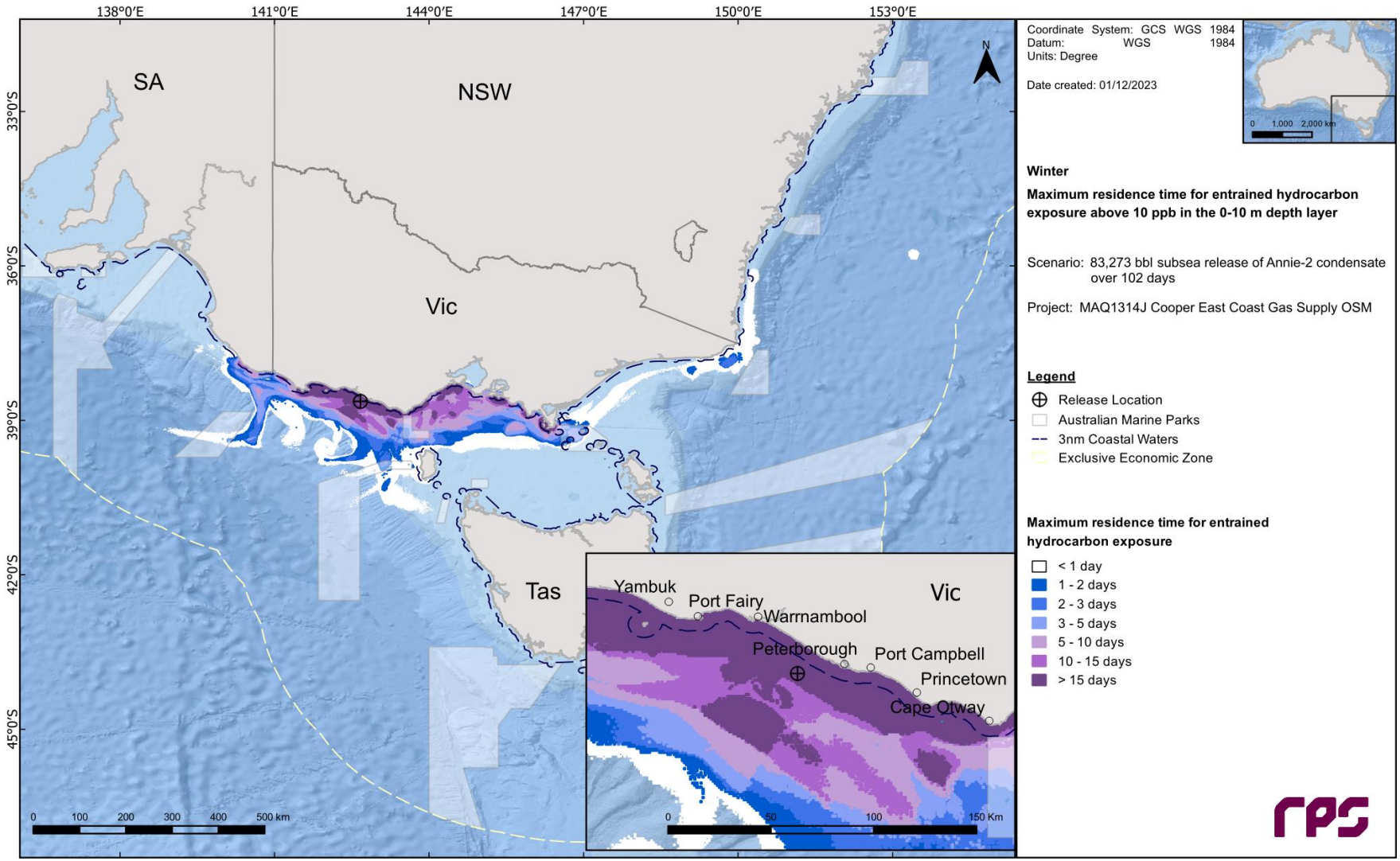

Figure 12.16 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

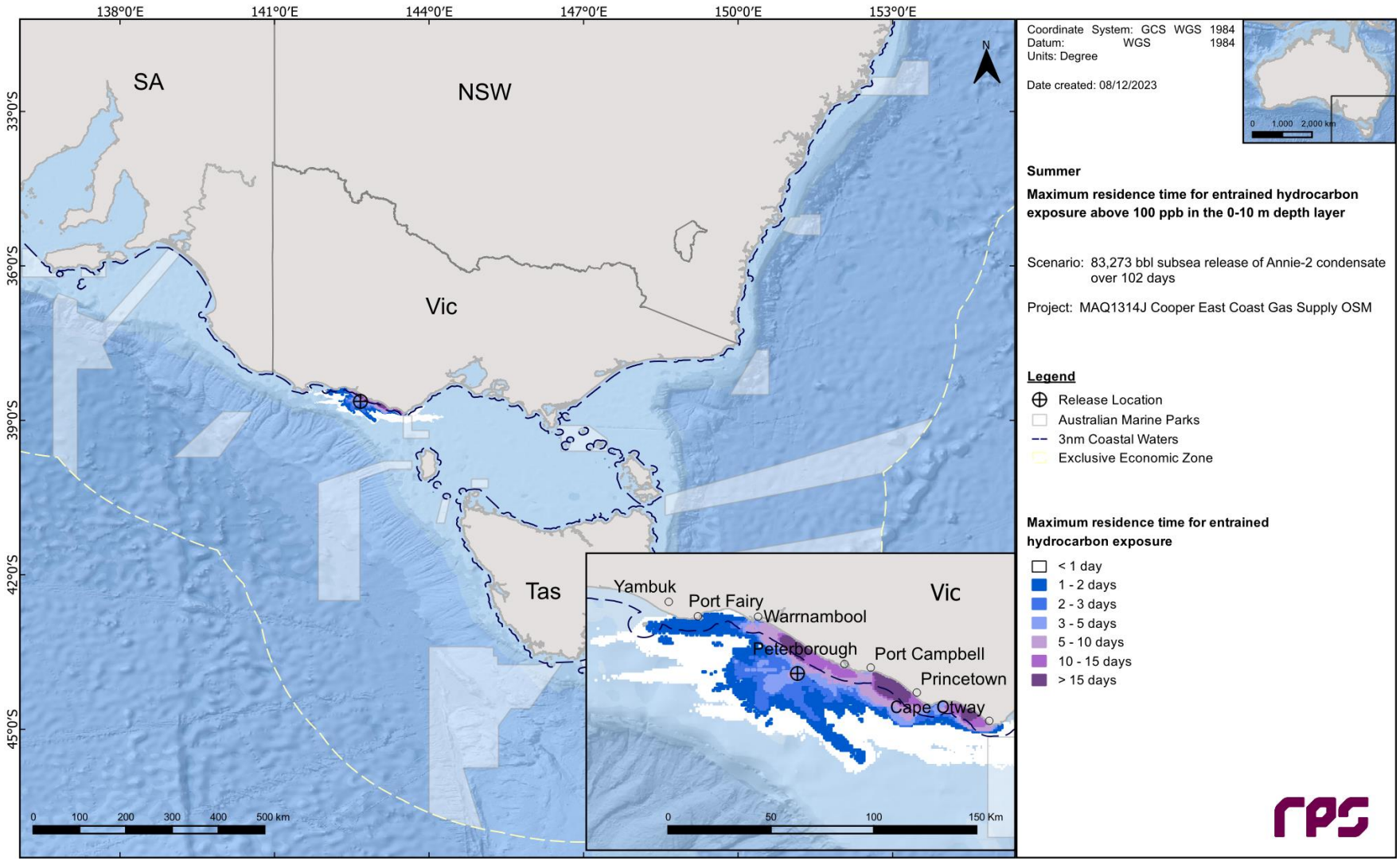

Figure 12.17 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during summer conditions.

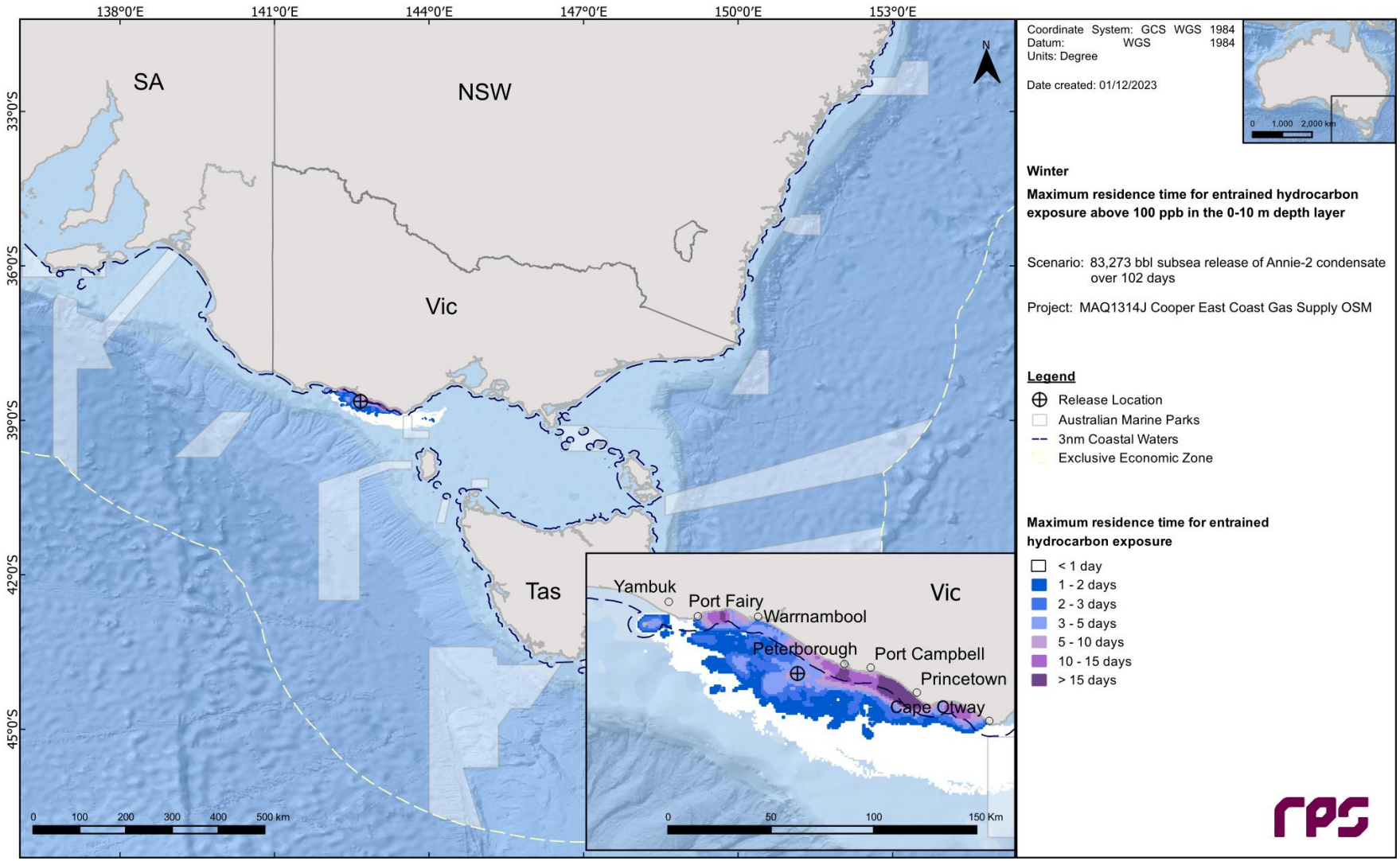

Figure 12.18 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea in the event of an 83,273 bbl subsurface release from a loss of well control at Pecten East-2 over 102 days. The results were calculated from 100 spill simulations during winter conditions.

12.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below for the following criteria:

a. Largest swept area for surface oil above 10 g/m^2;
b. Largest (total) volume of oil ashore;
c. Longest length of shoreline with oil accumulation above 100 g/m^2;
d. Largest area of entrained hydrocarbon exposure above 100 ppb; and
e. Largest area of dissolved hydrocarbon exposure above 50 ppb.

Table 12.11 presents a summary of in-water exposure and shoreline accumulation at the assessed thresholds for the identified deterministic simulations.

Table 12.11 Summary of the worst-case deterministic analysis based on the scenario presented in the stochastic analysis section.

Variable	Threshold	Deterministic Analysis Criteria				
		Largest swept area of floating oil >10 g/m²	Largest volume of oil ashore	Longest length of shoreline with accumulation >100 g/m²	Largest area of entrained hydrocarbon exposure >100 ppb	Largest area of dissolved hydrocarbon exposure >50 ppb
Season		Summer	Winter	Summer	Winter	Summer
Run Number		61	13	57	58	68
Total area of floating Oil exposure (km²)	1 g/m²	740	270	575	511	329
	10 g/m²	**45**	8	10	25	8
	50 g/m²	-	-	-	-	-
Total length of shoreline accumulation (km)	10 g/m²	134	164	187	133	65
	100 g/m²	47	69	**71**	45	14
	1,000 g/m²	-	3	4	-	-
Minimum time before accumulation on any shoreline (hours)	10 g/m²	60	77	113	207	327
	100 g/m²	375	103	125	240	390
	1,000 g/m²	-	1,665	1,147	-	-
Total volume of oil ashore (m³)		196	**343**	287	184	63
Total area of entrained hydrocarbon exposure (km²)	10 ppb	25,660	15,963	26,125	22,543	35,799
	100 ppb	3,143	2,678	3,050	**5,589**	2,606
Total area of dissolved hydrocarbon exposure (km²)	10 ppb	68	216	61	125	131
	50 ppb	-	-	-	-	**1**
	400 ppb	-	-	-	-	-
Start Date		27th April 2010 3 pm	23rd July 2010 4 am	19th March 2012 11 am	3rd August 2014 2 am	29th April 2016 11 am

NC = No contact at, or above the specified shoreline accumulation threshold.

12.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m^2 was identified as summer run number 61, which started on 27th April 2010.

Figure 11.19 illustrates the floating oil exposure and shoreline accumulation over the 116-day simulation.

Figure 11.20 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 116-day simulation.

Figure 11.21 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.12 summarises the mass balance peaks and at the end of the simulation.

Table 12.12 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 10 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	382.3	20.3	0.1
Entrained (m^3)	1,925.8	78.0	1,476.6
Dissolved (m^3)	8.1	14.1	0.5
Evaporation (m^3)	7,868.8	116.0	7,868.8
Decay (m^3)	3,154.7	116.0	3,154.7
Ashore (m^3)	199.6	107.8	195.9

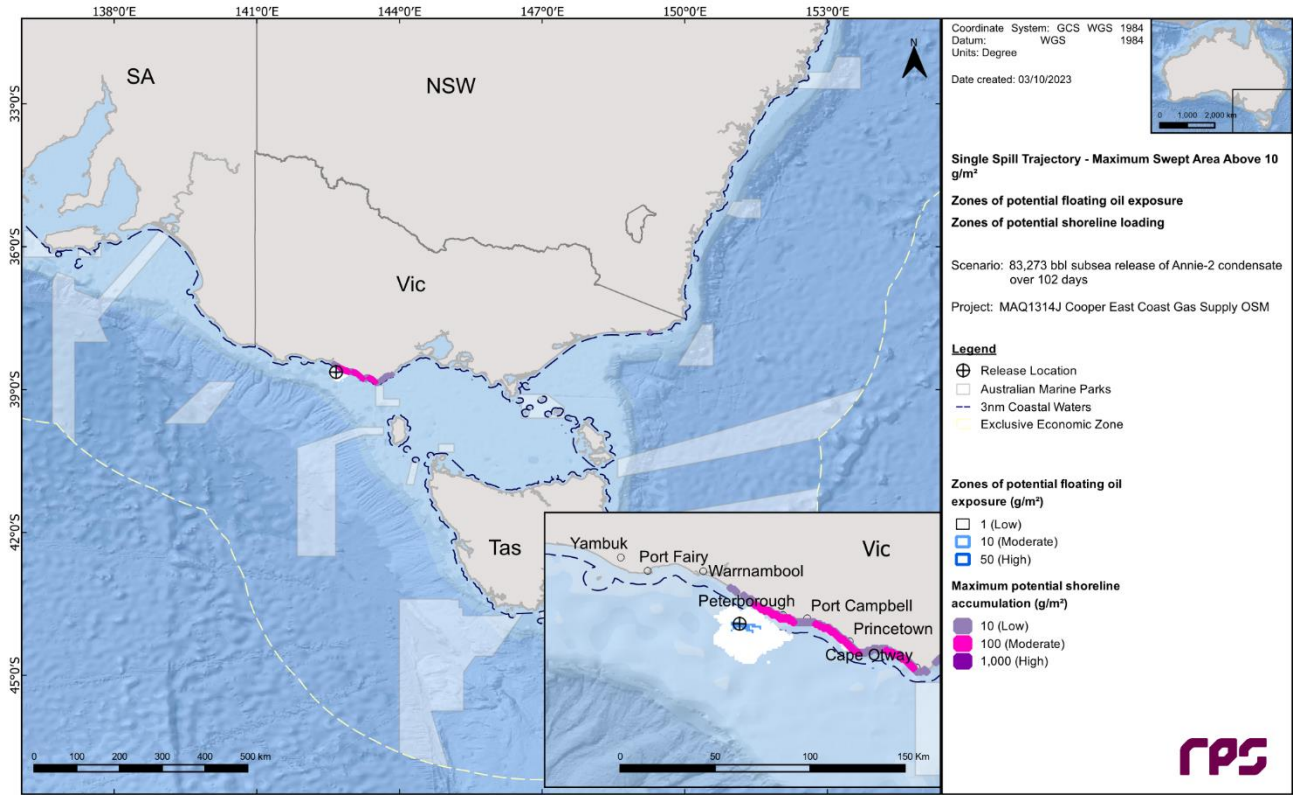

Figure 12.19 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 10 g/m^2.

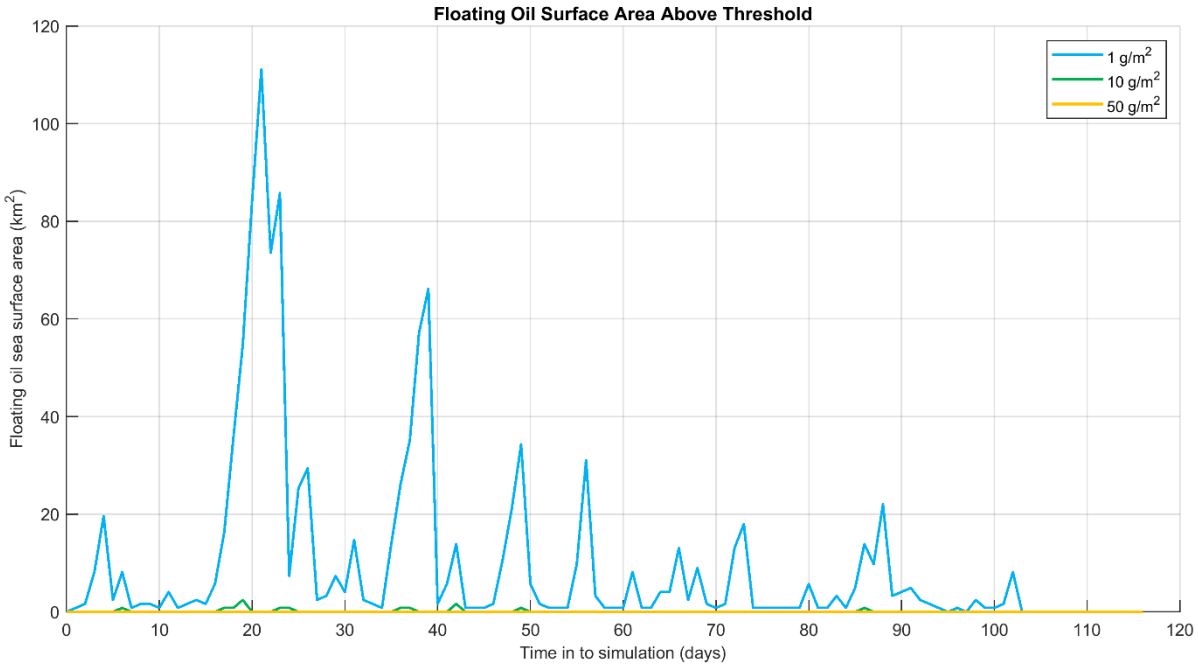

Figure 12.20 Time series of the sea surface exposure above each threshold for the trajectory with the largest swept area of floating oil above 10 g/m^2.

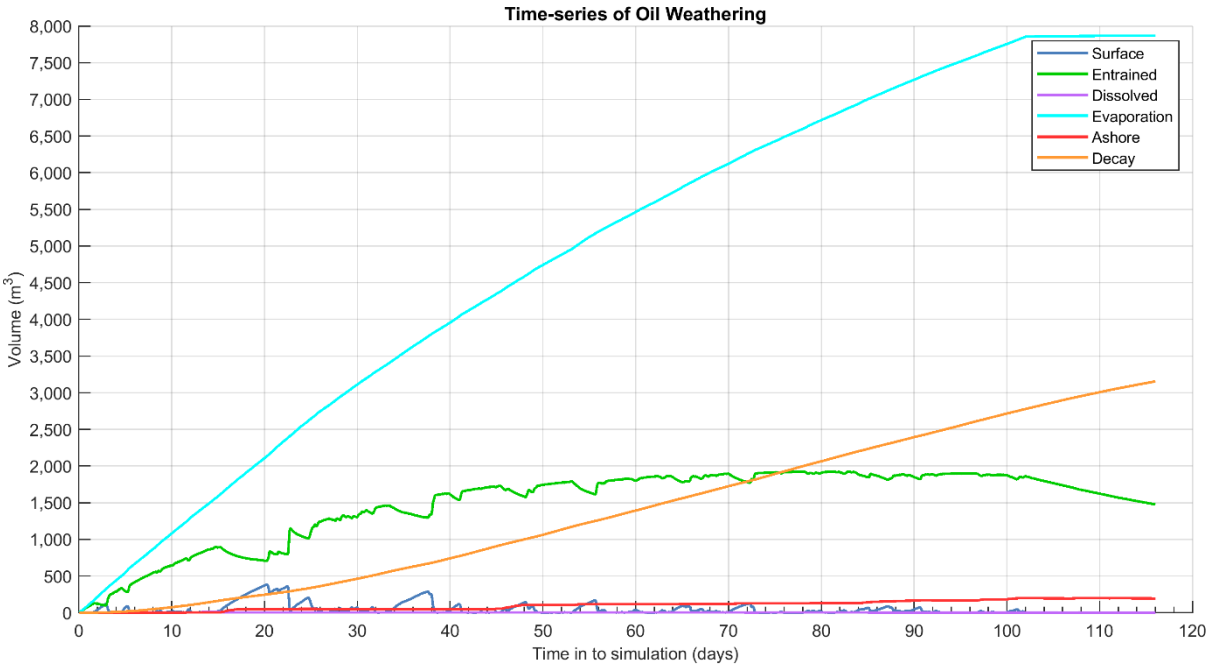

Figure 12.21 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m^2.

12.2.2 Deterministic Case: Largest volume of oil ashore

The deterministic trajectory that resulted in the largest volume of oil ashore was identified as winter run number 13, which started on 23rd July 2010.

Figure 12.22 illustrates the floating oil exposure and shoreline accumulation over the 116-day simulation.

Figure 12.23 displays the time series of the volume of oil accumulating on shorelines at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds over the 116-day simulation.

Figure 12.24 presents the fates and weathering graph for the corresponding single spill trajectory and Table 12.13 summarises the mass balance peaks and at the end of the simulation.

Table 12.13 Summary of the mass balance for the trajectory with the largest volume ashore.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	156.7	37.3	0.2
Entrained (m^3)	1,857.0	87.0	1,433.1
Dissolved (m^3)	7.9	18.5	0.5
Evaporation (m^3)	7,697.1	116.0	7,697.1
Decay (m^3)	3,222.8	116.0	3,222.8
Ashore (m^3)	348.4	104.1	342.9

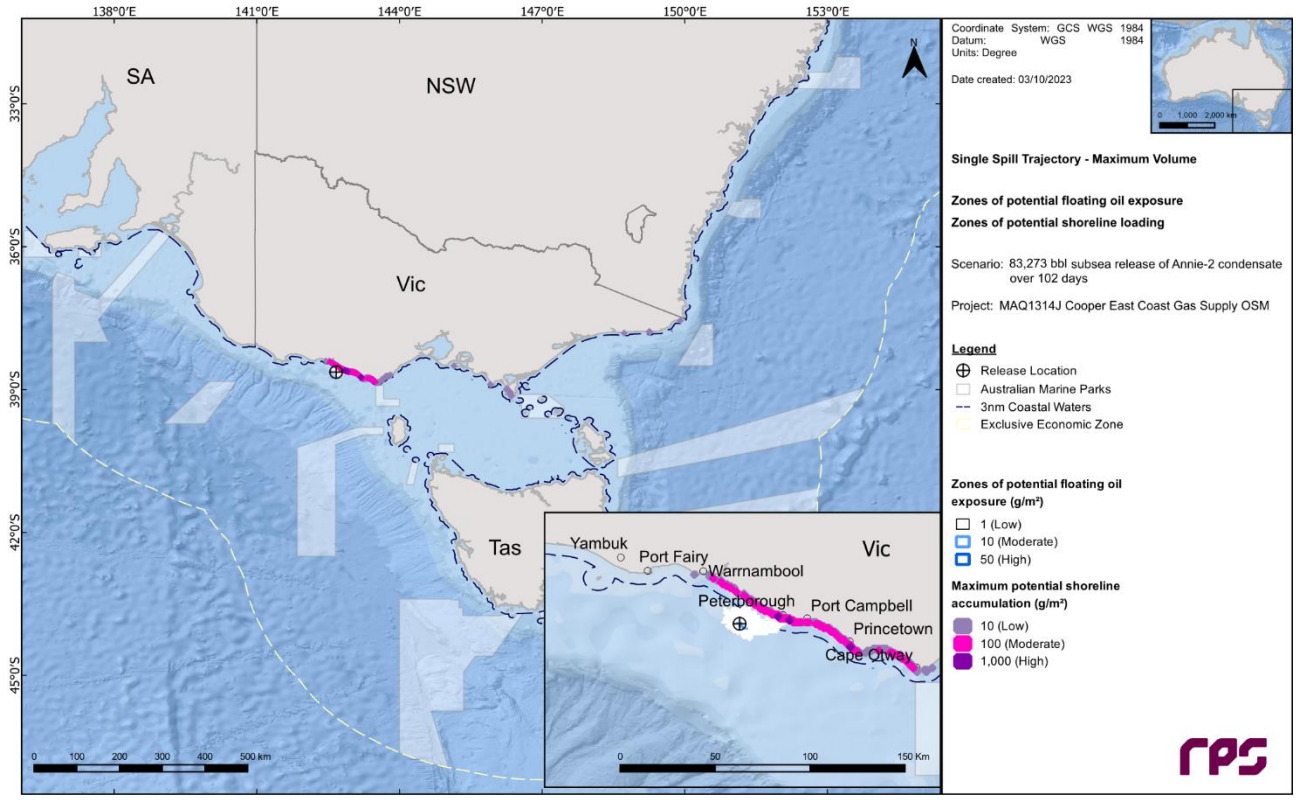

Figure 12.22 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume ashore.

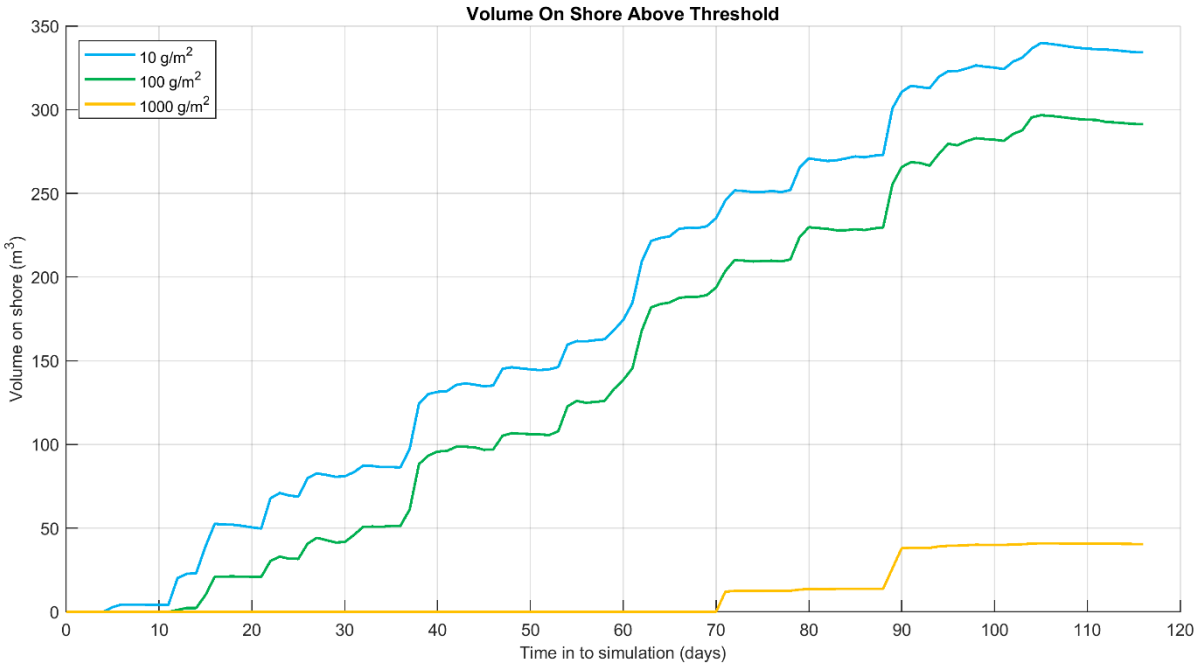

Figure 12.23 Time series of oil accumulation on the shoreline above each threshold for the trajectory with the largest volume ashore.

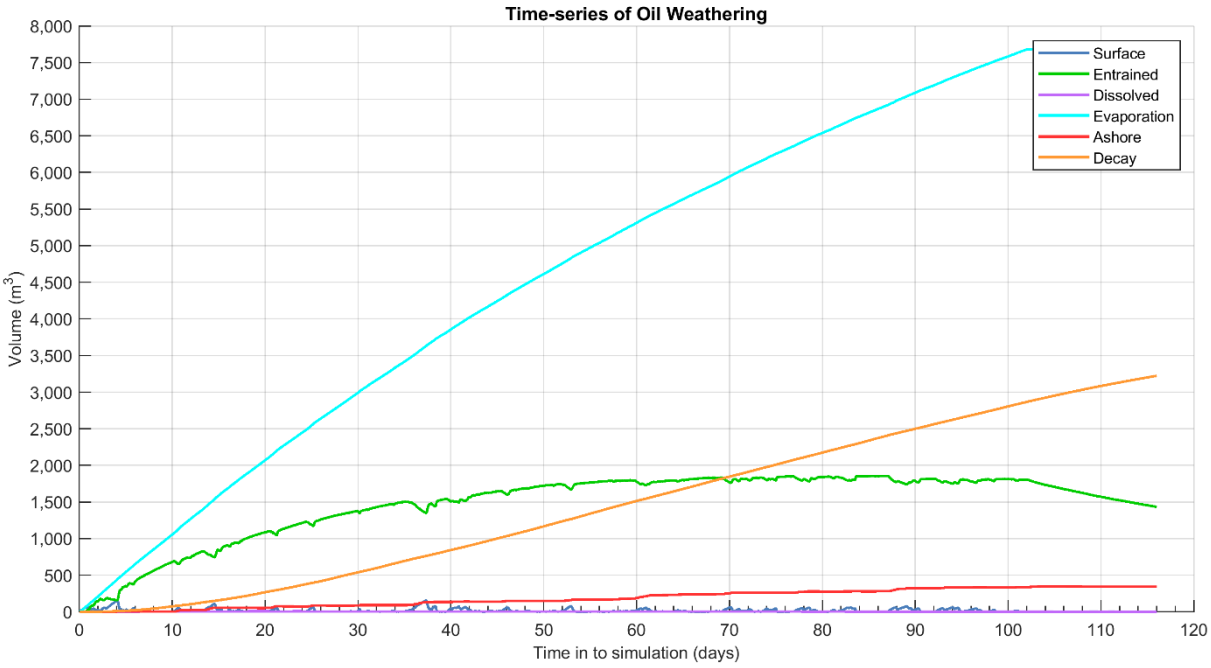

Figure 12.24 Predicted weathering and fates graph for the trajectory with the largest volume ashore.

12.2.3 Deterministic Case: Longest length of shoreline with accumulation above 100 g/m^2

The deterministic trajectory that resulted in the longest length of shoreline with accumulation above 100 g/m^2 was identified as summer run number 57, which started on 19th March 2012.

Figure 12.25 illustrates the floating oil exposure and shoreline accumulation over the 116-day simulation.

Figure 12.26 displays the time series of the length of shoreline with accumulation at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds over the 116-day simulation.

Figure 12.27 presents the fates and weathering graph for the corresponding single spill trajectory and Table 12.14 summarises the mass balance peaks and at the end of the simulation.

Table 12.14 Summary of the mass balance for the trajectory with the longest length of shoreline with accumulation above 100 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	353.5	5.3	0.7
Entrained (m^3)	1,884.2	89.0	1,458.1
Dissolved (m^3)	8.1	20.9	0.4
Evaporation (m^3)	7,765.0	116.0	7,765.0
Decay (m^3)	3,222.7	116.0	3,222.7
Ashore (m^3)	250.0	115.5	249.9

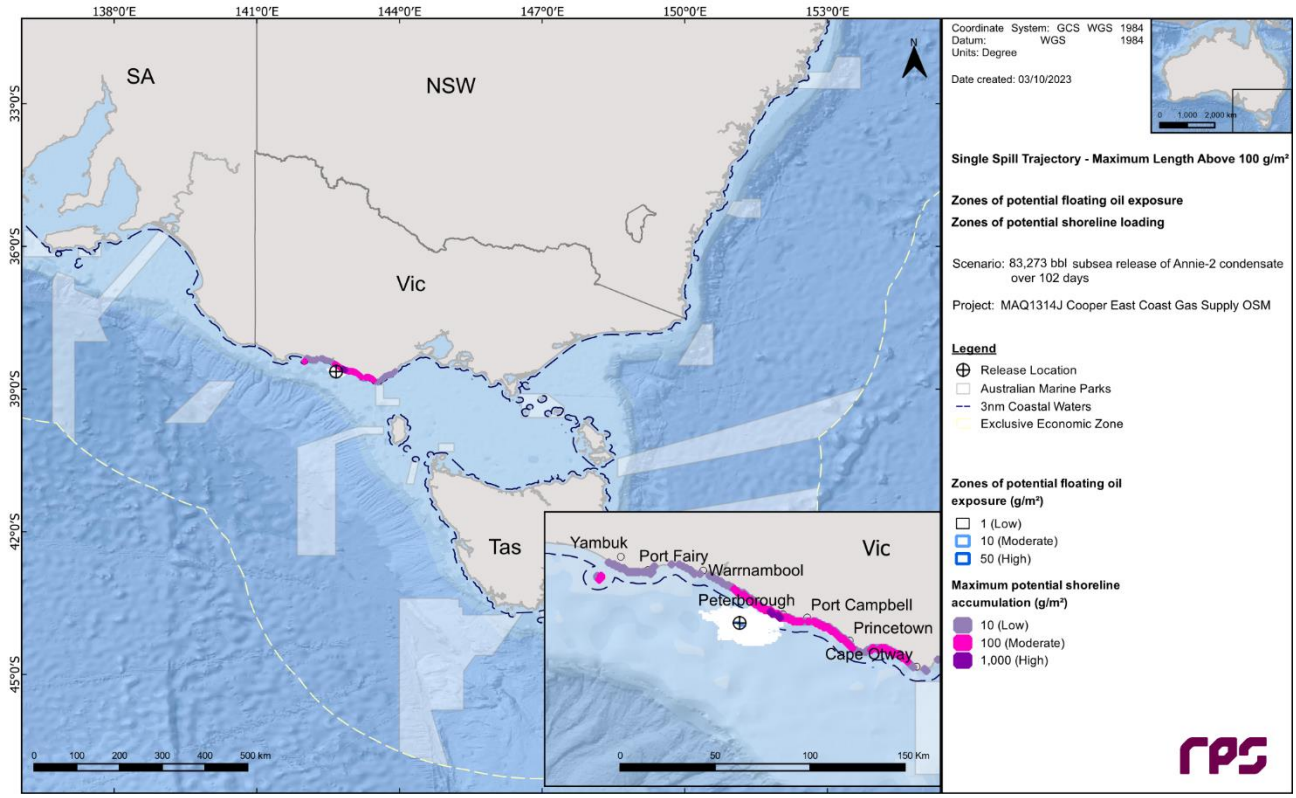

Figure 12.25 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the longest length of shoreline with accumulation above 100 g/m^2.

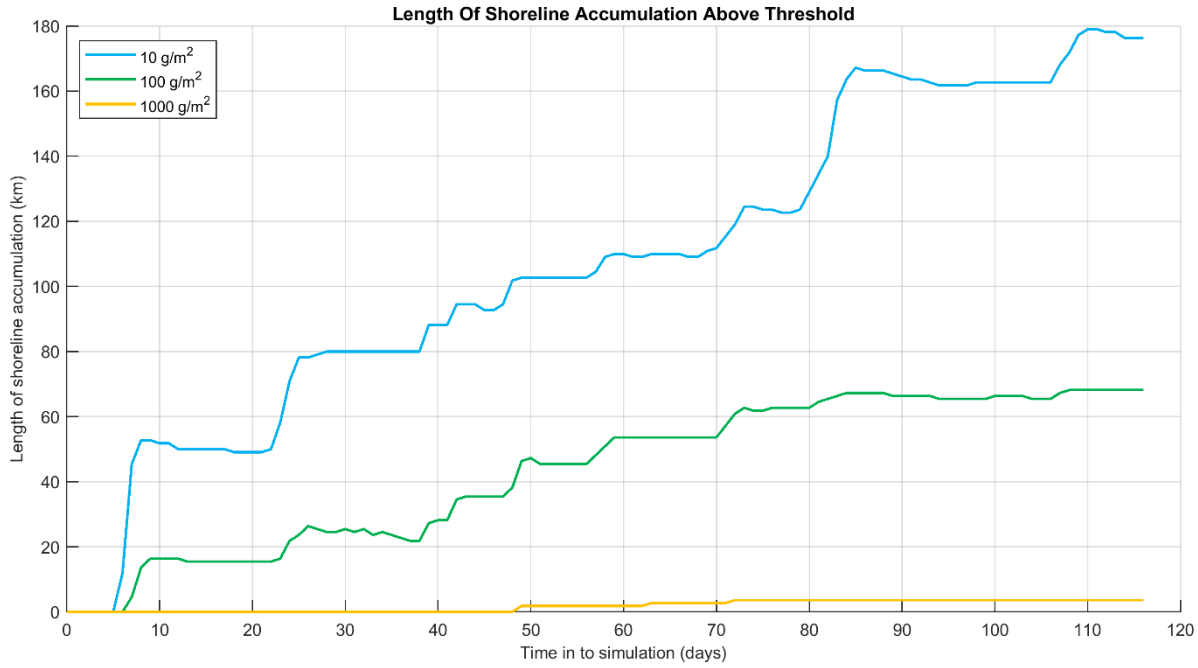

Figure 12.26 Time series of the length of shoreline with accumulation above each threshold for the trajectory with the longest length of shoreline with accumulation above 100 g/m².

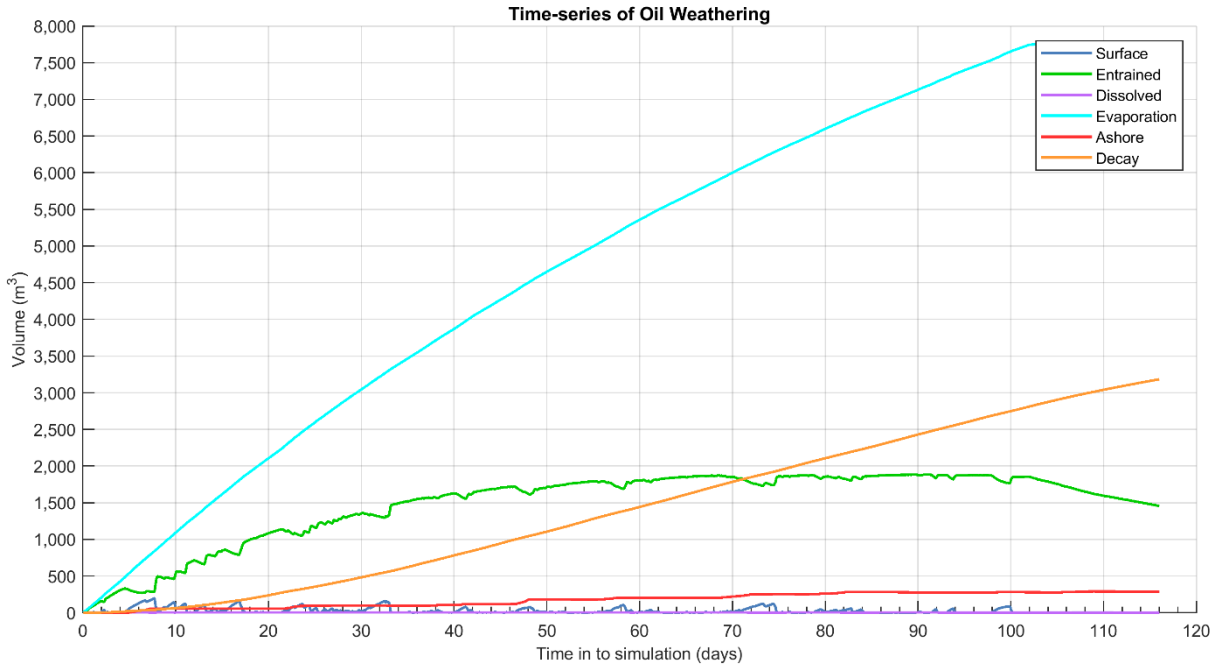

Figure 12.27 Predicted weathering and fates graph for the trajectory with the longest length of shoreline with accumulation above 100 g/m².

12.2.4 Deterministic Case: Largest area of entrained hydrocarbon exposure above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbon exposure above 100 ppb was identified as winter run number 58, which started on 3rd August 2014.

Figure 12.28 illustrates the zones of potential entrained hydrocarbon exposure over the 116-day simulation.

Figure 12.29 displays the time series of the area of entrained hydrocarbon exposure at the low (10 ppb) and high (100 ppb) thresholds over the 116-day simulation.

Figure 12.30 presents the fates and weathering graph for the corresponding single spill trajectory and Table 12.15 summarises the mass balance peaks and at the end of the simulation.

Table 12.15 Summary of the mass balance for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	266.1	13.8	0.1
Entrained (m^3)	1,935.0	85.5	1,506.6
Dissolved (m^3)	8.1	22.0	0.5
Evaporation (m^3)	7,751.3	116.0	7,751.3
Decay (m^3)	3,254.5	116.0	3,254.5
Ashore (m^3)	184.5	113.0	183.8

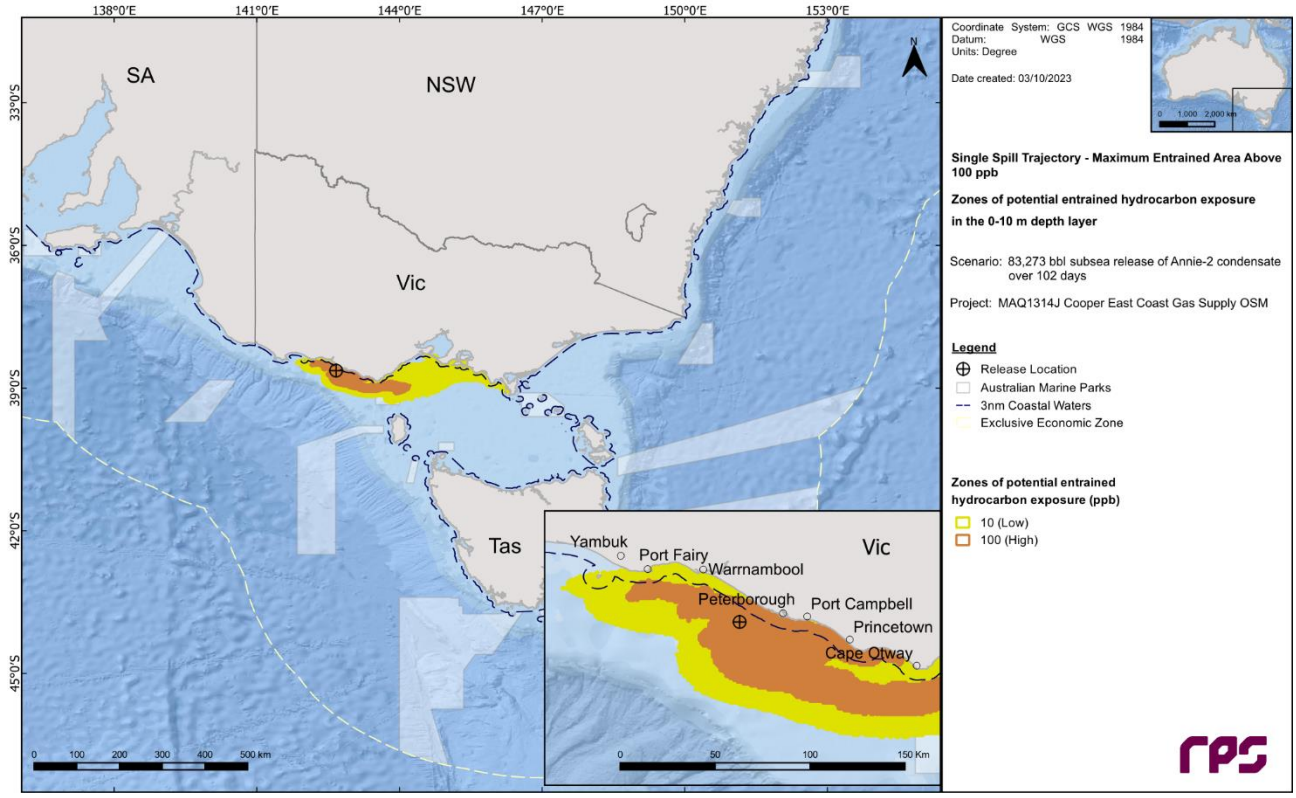

Figure 12.28 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

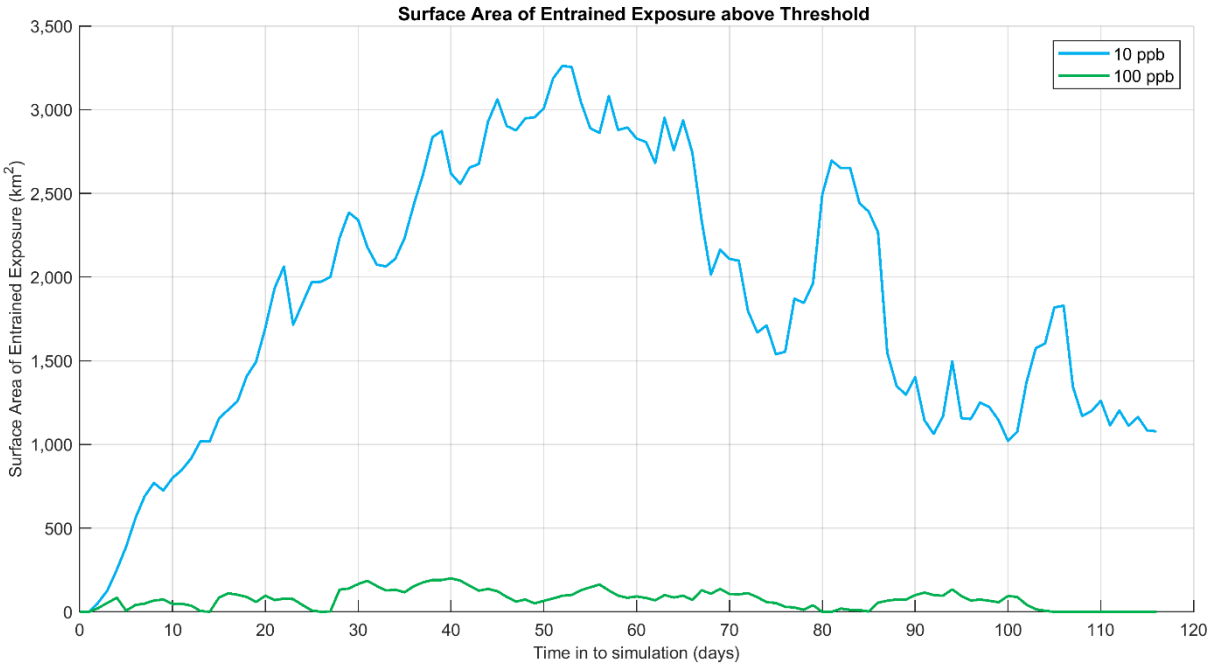

Figure 12.29 Time series of the entrained hydrocarbon exposure area above each threshold for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

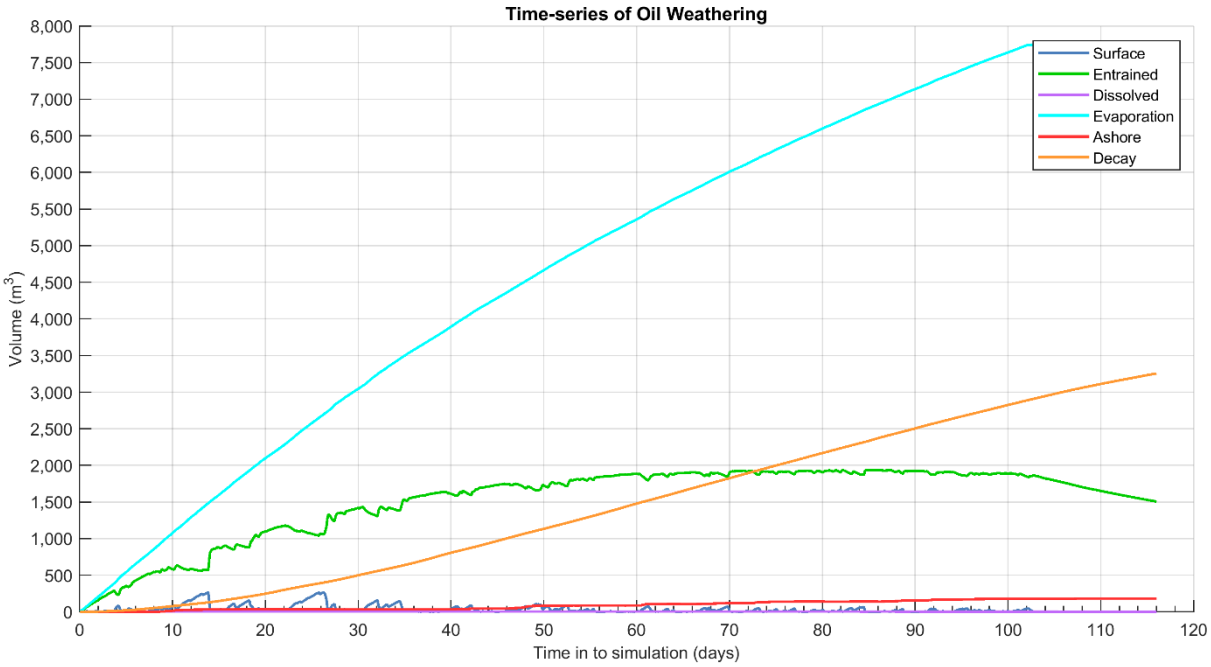

Figure 12.30 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

12.2.5 Deterministic Case: Largest area of dissolved hydrocarbon exposure above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 50 ppb was identified as summer run number 68, which started on 29th April 2016.

Figure 12.31 illustrates the zones of potential dissolved hydrocarbon exposure over the 116-day simulation.

Figure 12.32 displays the time series of the area of dissolved hydrocarbon exposure at the low (10 ppb), moderate (50 ppb) and high (400 ppb) thresholds over the 116-day simulation.

Figure 12.33 presents the fates and weathering graph for the corresponding single spill trajectory and Table 12.16 summarises the mass balance peaks and at the end of the simulation.

Table 12.16 Summary of the mass balance for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 116
Surface (m^3)	160.9	7.8	0.7
Entrained (m^3)	1,982.5	74.3	1,550.5
Dissolved (m^3)	7.7	17.8	0.3
Evaporation (m^3)	7,670.3	116.0	7,670.3
Decay (m^3)	3,411.7	116.0	3,411.7
Ashore (m^3)	66.6	99.3	63.1

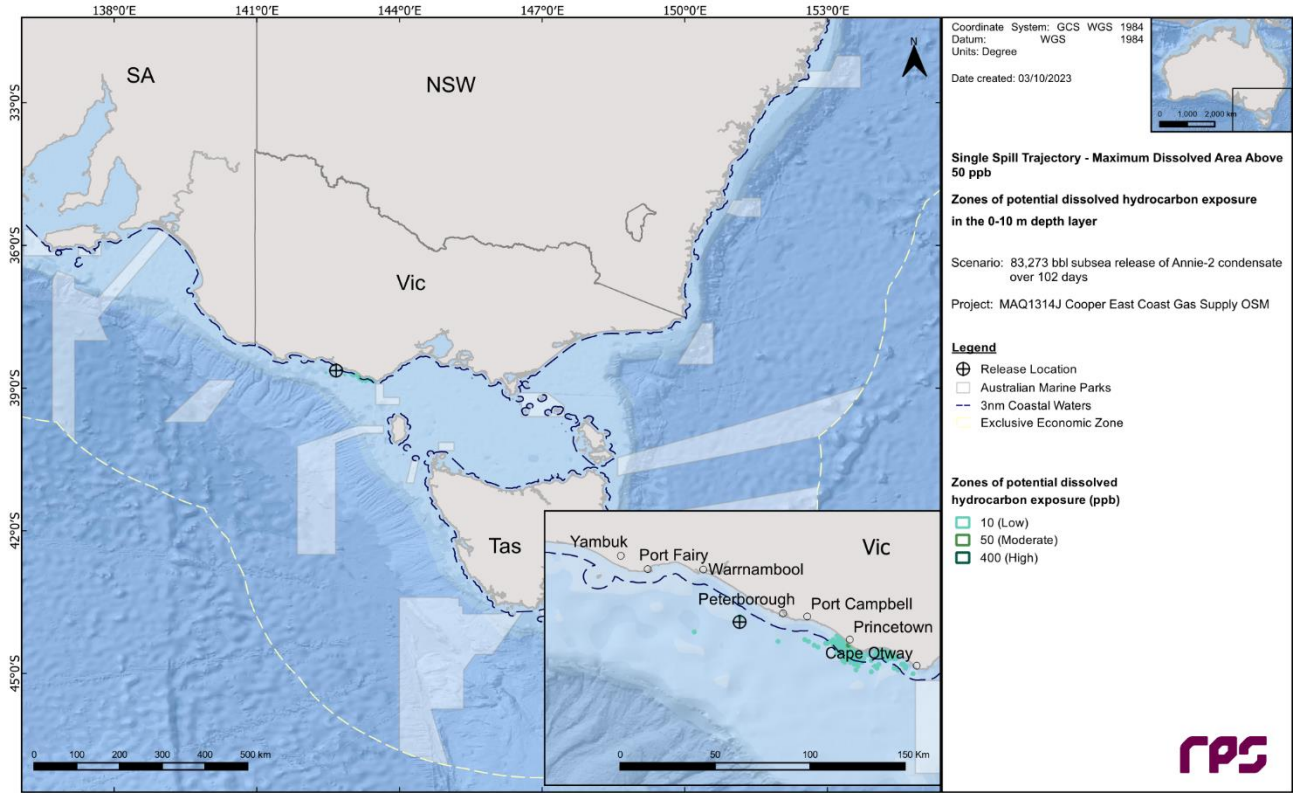

Figure 12.31 Zones of potential dissolved hydrocarbon exposure, for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

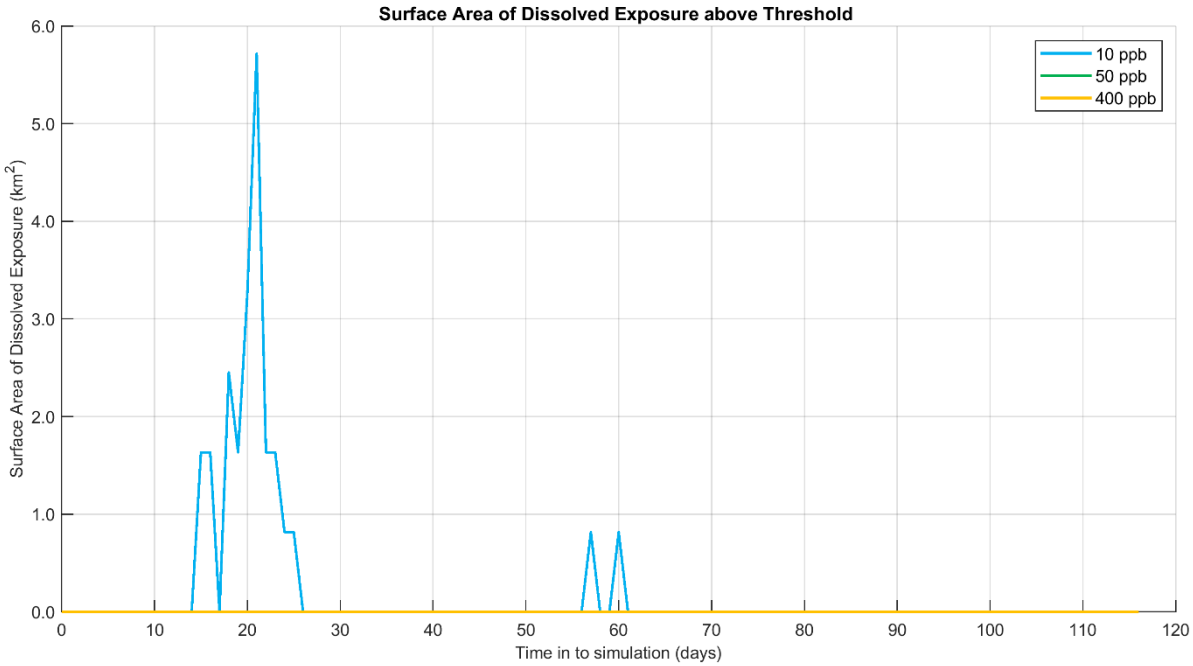

Figure 12.32 Time series of the dissolved hydrocarbon exposure area above each threshold for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

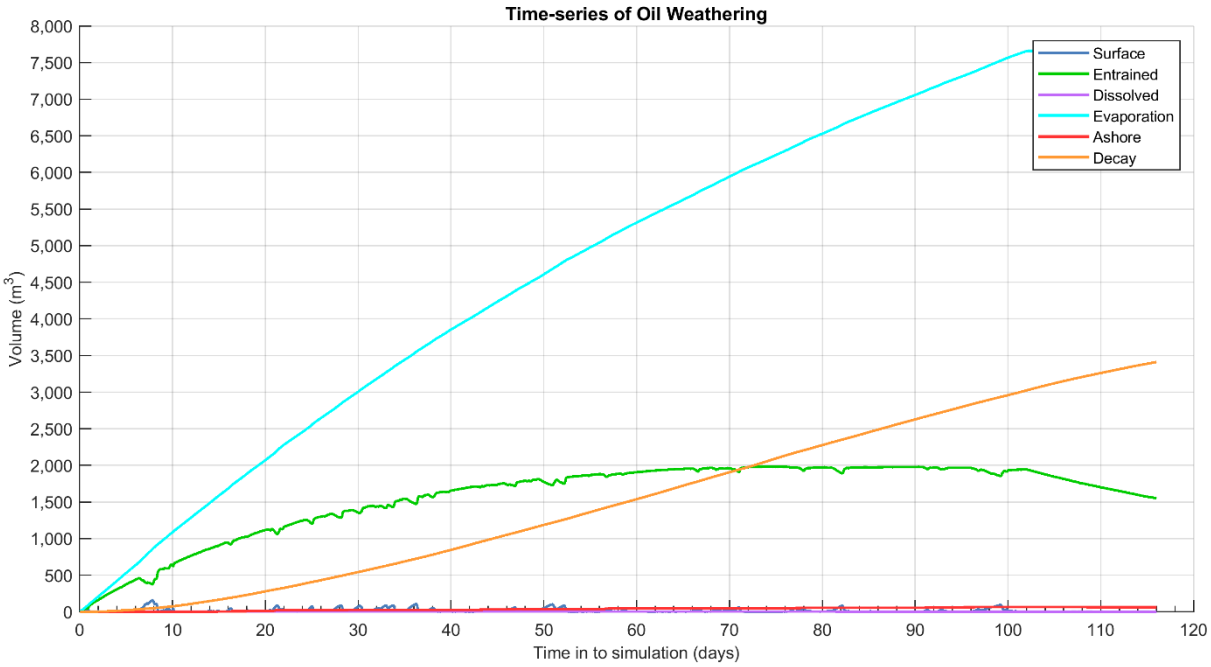

Figure 12.33 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

13 RESULTS – SCENARIO 3 – 66,430 BBL (10,562 M^3) SUBSURFACE RELEASE FROM A LOSS OF WELL CONTROL AT ANNIE-2

This scenario examined a 66,430 bbl (10,562 m^3) subsurface release of condensate over 104 days to represent a LOWC scenario at Annie-2 well. A total of 100 spill simulations were run per season (summer and winter) and each simulation was tracked for 118 days. The results are presented on a seasonal basis.

Sections 13.1 and 13.2 present the seasonal stochastic analysis and deterministic analysis results, respectively.

13.1 Stochastic Analysis

13.1.1 Floating Oil Exposure

Table 13.1 summarises the maximum distance travelled by floating oil on the sea surface at each threshold. The maximum distance and corresponding direction from the release location to the low (1–10 g/m^2) and moderate (10–50 g/m^2) exposure zones was 55.7.0 km (east, winter) and 3.2 km (east, winter), respectively. No high (>50 g/m^2) exposure zones were predicted during either summer or winter conditions.

Table 13.2 summarises the potential floating oil exposure to individual receptors.

During summer, a total of 16 BIAs were predicted to be exposed to floating oil at, or above, the low threshold. Excluding the BIAs that the release location resides within (see Section 10.3), the highest probability (38%) of low exposure was predicted at the Southern Right Whale – Aggregation BIA. The minimum time before low exposure to the Southern Right Whale – Aggregation was 0.83 days.

Similarly, during winter, a total of 16 BIAs were predicted to be exposed to floating oil at, or above, the low threshold. Again, the highest probability (8%) of low exposure was predicted at the Southern Right Whale – Aggregation BIA. The minimum time before low exposure to the Southern Right Whale – Aggregation was 2.17 days.

Table 13.3 presents the maximum residence time of floating oil exposure for each individual grid cell within each individual receptor.

Figure 13.1 and Figure 13.2 present the zones of potential floating oil exposure for each season whilst Figure 13.3 to Figure 13.6 present the maximum residence time of floating oil exposure for the NOPSEMA thresholds.

Table 13.1 Maximum distance and direction from the release location to the edge of floating oil exposure. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations per season.

Distance and direction travelled	Zones of potential floating oil exposure					
	Summer			Winter		
	Low	Moderate	High	Low	Moderate	High
Maximum distance (km) from release location	53.0	1.6	-	55.7	3.2	-
Maximum distance (km) from release location (99th percentile)	30.0	1.6	-	33.1	3.2	-
Direction	E	W	-	E	E	-

Table 13.2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer						Winter					
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)		
		Low	Mod.	High	Low	Mod.	High	Low	Mod.	High	Low	Mod.	High
BIA	Antipodean Albatross - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Black-browed Albatross - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Bullers Albatross - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Campbell Albatross - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Common Diving-petrel - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Indian Yellow-nosed Albatross - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Pygmy Blue Whale - Distribution*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Pygmy Blue Whale - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Pygmy Blue Whale - Foraging annual high use area*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Short-tailed Shearwater - Foraging	2	-	-	12.29	-	-	2	-	-	13.63	-	-
	Shy Albatross - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Southern Right Whale - Aggregation	38	-	-	0.83	-	-	8	-	-	2.17	-	-
	Southern Right Whale - Known Core Range*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Wandering Albatross - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	Wedge-tailed Shearwater - Foraging*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
	White Shark - Distribution*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
IBRA	Otway Plain	2	-	-	12.29	-	-	2	-	-	13.63	-	-
	Warrnambool Plain	65	-	-	1.63	-	-	78	-	-	1.33	-	-
IMCRA	Otway*	100	57	-	0.04	0.50	-	100	44	-	0.04	0.58	-
MNP	Twelve Apostles	36	-	-	7.42	-	-	58	-	-	4.21	-	-
Nearshore Waters	Colac Otway	2	-	-	12.29	-	-	2	-	-	13.63	-	-
	Corangamite	50	-	-	4.92	-	-	78	-	-	1.17	-	-
	Moyne	22	-	-	1.63	-	-	11	-	-	5.96	-	-

Receptor		Summer						Winter					
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)		
		Low	Mod.	High	Low	Mod.	High	Low	Mod.	High	Low	Mod.	High
State Waters	Victoria State Waters	99	-	-	0.50	-	-	99	-	-	0.54	-	-
Nearshore Waters (Sub-LGA)	Bay of Islands	22	-	-	1.63	-	-	10	-	-	5.96	-	-
	Cape Otway West	2	-	-	12.29	-	-	2	-	-	13.63	-	-
	Moonlight Head	42	-	-	7.21	-	-	66	-	-	4.54	-	-
	Port Campbell	15	-	-	4.92	-	-	35	-	-	1.17	-	-

*The release location resides within the receptor boundaries.

Table 13.3 Summary of the maximum residence time of floating oil exposure for each individual grid cell within each individual receptor. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer			Winter		
		Maximum residence time of floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross - Foraging*	12.83	0.46	-	8.42	0.58	-
	Black-browed Albatross - Foraging*	12.83	0.46	-	8.42	0.58	-
	Bullers Albatross - Foraging*	12.83	0.46	-	8.42	0.58	-
	Campbell Albatross - Foraging*	12.83	0.46	-	8.42	0.58	-
	Common Diving-petrel - Foraging*	12.83	0.46	-	8.42	0.58	-
	Indian Yellow-nosed Albatross - Foraging*	12.83	0.46	-	8.42	0.58	-
	Pygmy Blue Whale - Distribution*	12.83	0.46	-	8.42	0.58	-
	Pygmy Blue Whale - Foraging*	12.83	0.46	-	8.42	0.58	-
	Pygmy Blue Whale - Foraging annual high use area*	12.83	0.46	-	8.42	0.58	-
	Short-tailed Shearwater - Foraging	0.04	-	-	0.17	-	-
	Shy Albatross - Foraging*	12.83	0.46	-	8.42	0.58	-
	Southern Right Whale - Aggregation	0.17	-	-	0.25	-	-
	Southern Right Whale - Known Core Range*	12.83	0.46	-	8.42	0.58	-
	Wandering Albatross - Foraging*	12.83	0.46	-	8.42	0.58	-
	Wedge-tailed Shearwater - Foraging*	12.83	0.46	-	8.42	0.58	-
	White Shark - Distribution*	12.83	0.46	-	8.42	0.58	-
IBRA	Otway Plain	0.04	-	-	0.17	-	-
	Warrnambool Plain	0.71	-	-	0.75	-	-
IMCRA	Otway*	12.83	0.46	-	8.42	0.58	-
MNP	Twelve Apostles	0.54	-	-	0.63	-	-
Nearshore Waters	Colac Otway	0.04	-	-	0.17	-	-
	Corangamite	0.71	-	-	0.75	-	-
	Moyne	0.38	-	-	0.33	-	-
State Waters	Victoria State Waters	1.5	-	-	1.21	-	-

Receptor		Summer			Winter		
		Maximum residence time of floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High
Nearshore Waters (Sub-LGA)	Bay of Islands	0.38	-	-	0.33	-	-
	Cape Otway West	0.04	-	-	0.17	-	-
	Moonlight Head	0.54	-	-	0.63	-	-
	Port Campbell	0.71	-	-	0.75	-	-

*The release location resides within the receptor boundaries.

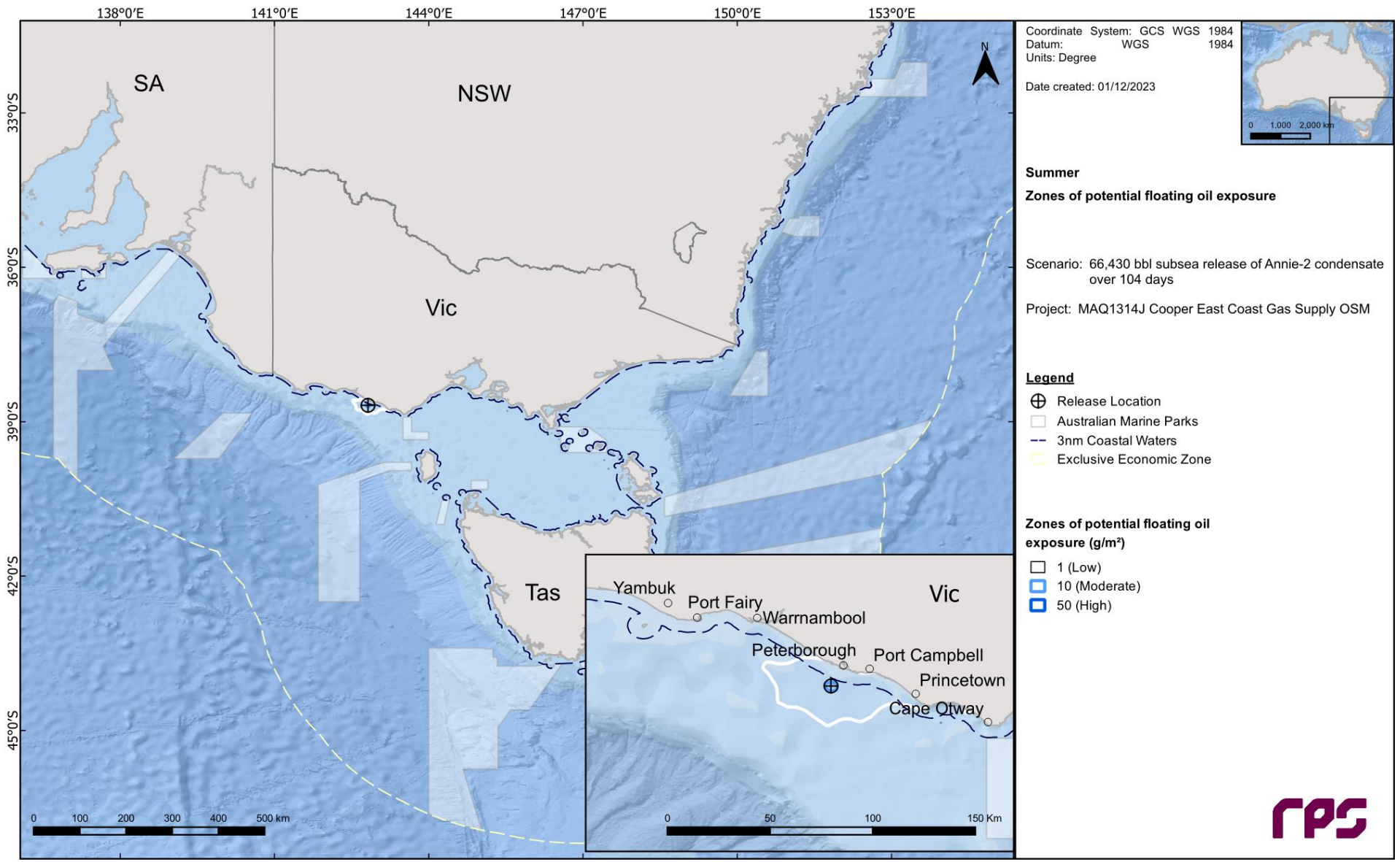

Figure 13.1 Zones of potential floating oil exposure in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

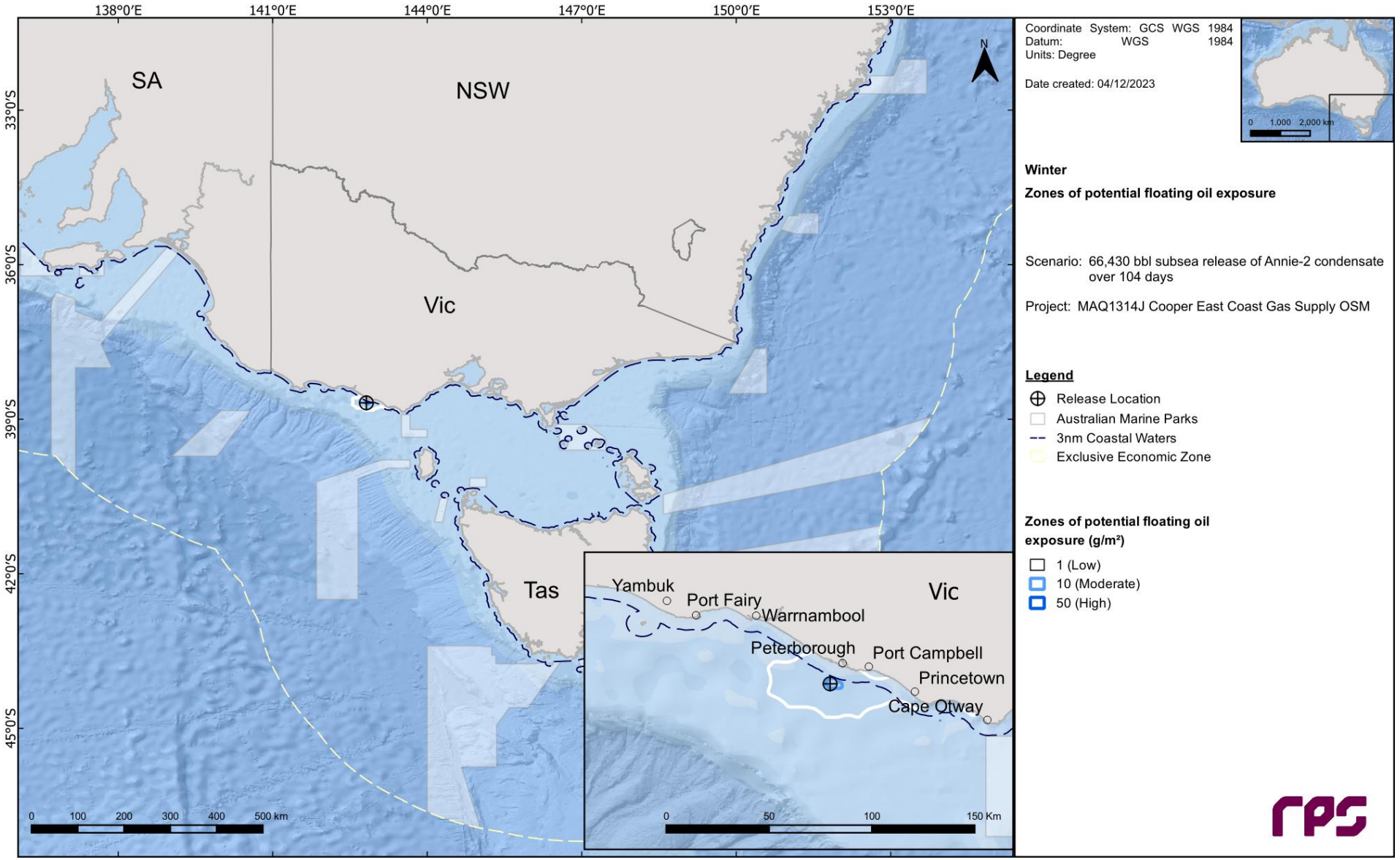

Figure 13.2 Zones of potential floating oil exposure in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

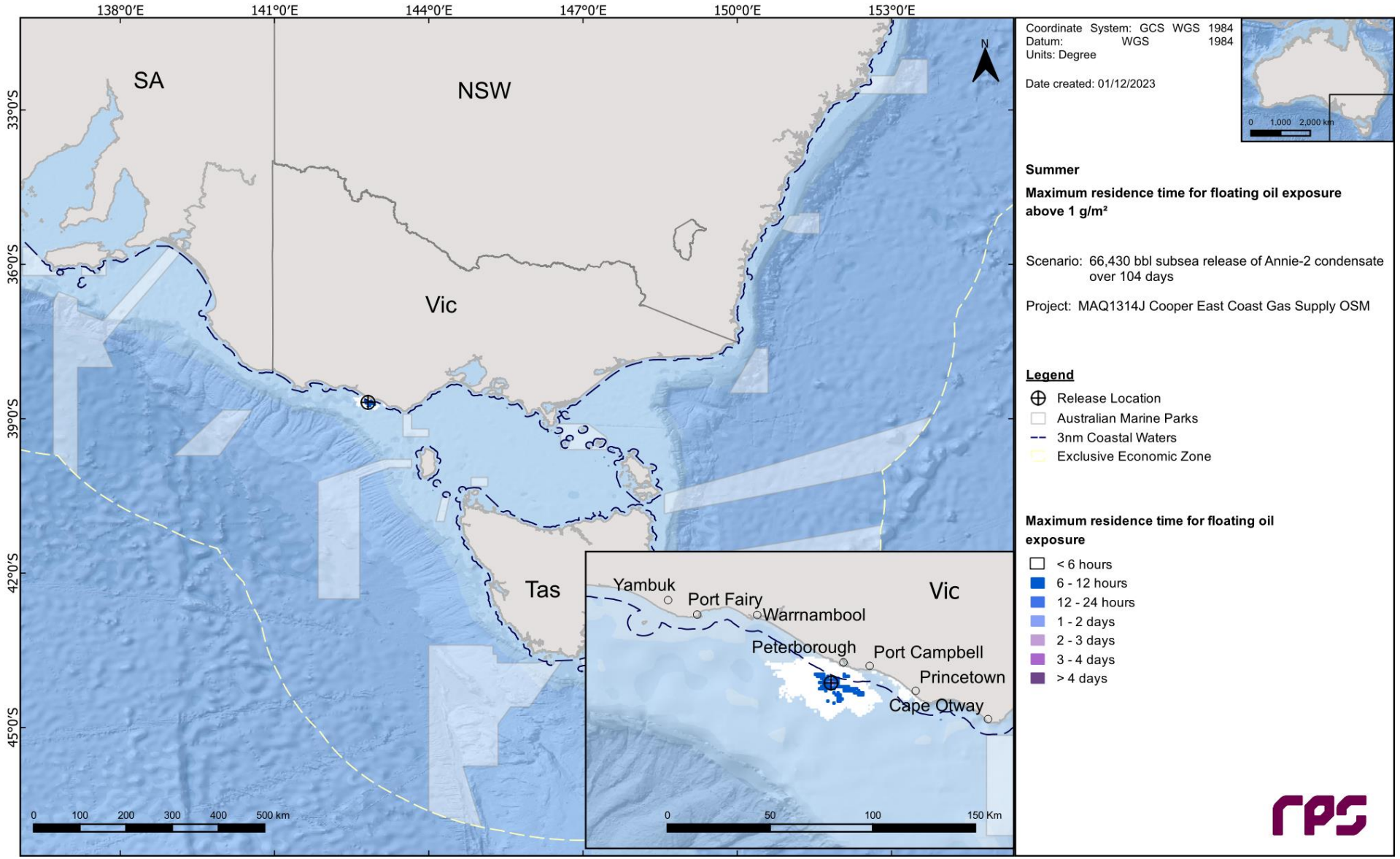

Figure 13.3 Maximum residence time of floating oil exposure above 1 g/m², in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

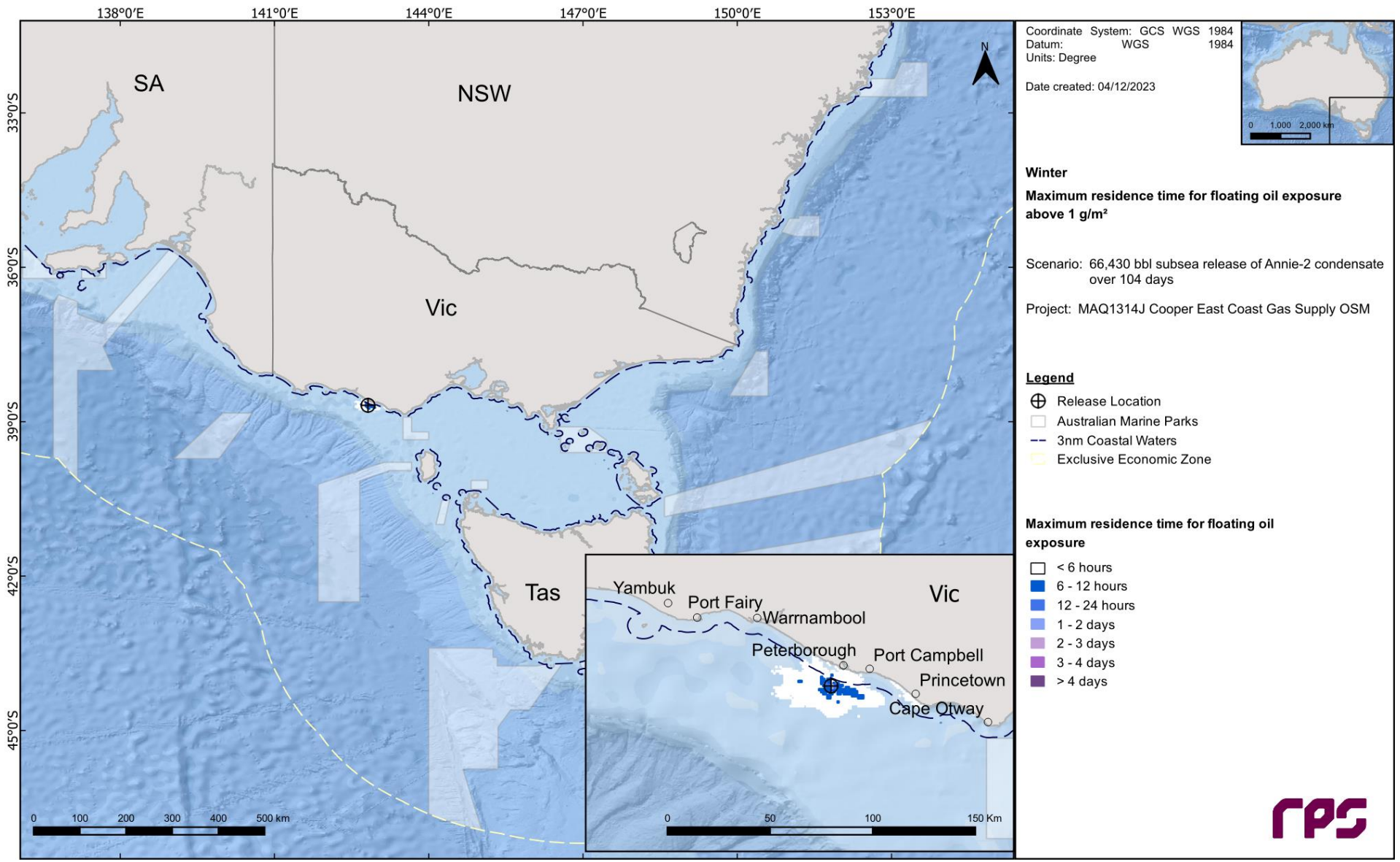

Figure 13.4 Maximum residence time of floating oil exposure above 1 g/m², in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

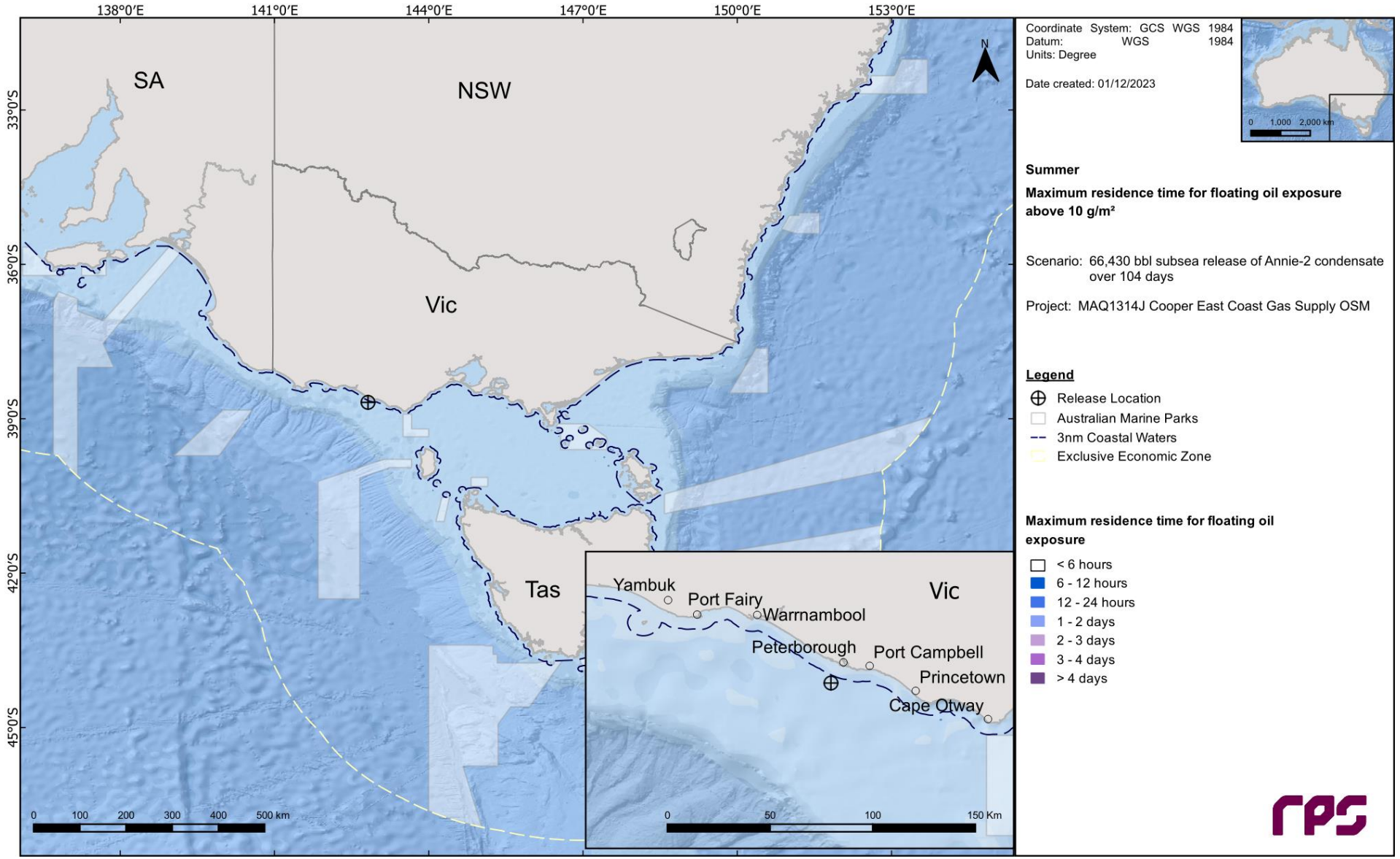

Figure 13.5 Maximum residence time of floating oil exposure above 10 g/m², in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

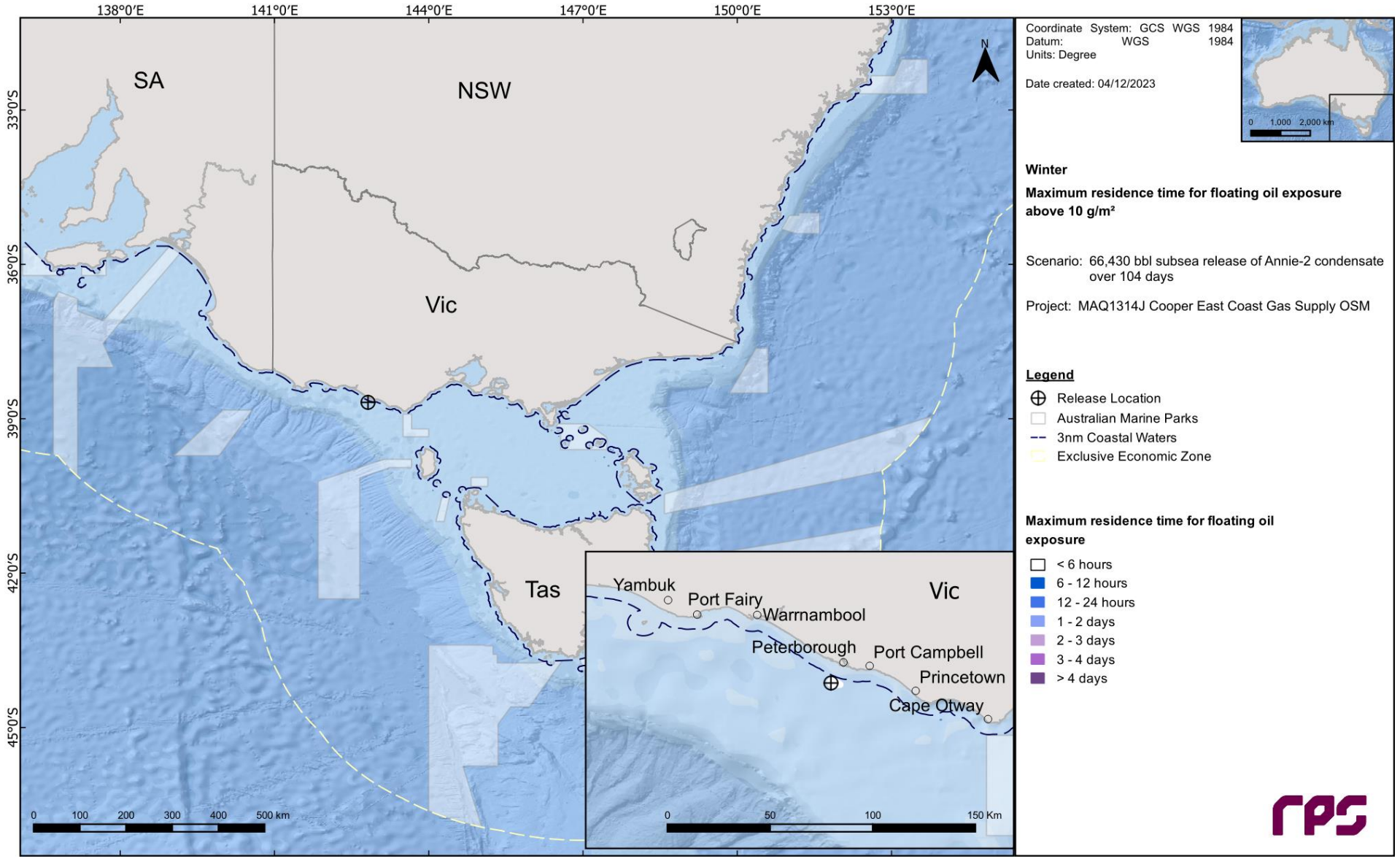

Figure 13.6 Maximum residence time of floating oil exposure above 10 g/m², in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

13.1.2 Shoreline Accumulation

Table 13.4 presents a summary of the potential shoreline accumulation. The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 100% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 0.96 day. The maximum total volume ashore for a single spill trajectory was 312.1 m^3, and the maximum length of shoreline with accumulation above the low, moderate and high thresholds were 224.0 km (winter), 62.0 km (winter) and 6.0 km (winter), respectively.

Table 13.5 and Table 13.6 summarises the shoreline accumulation on individual receptors during summer and winter, respectively.

During summer conditions, the shoreline segment of Corangamite LGA had the highest probability of accumulation above the low and moderate thresholds (100% and 99% respectively), whilst Moyne LGA and Bay of Islands sub-LGA shoreline had the highest probability of accumulation above the high threshold (5%). The minimum time for low threshold shoreline accumulation at Moyne was 0.96 days.

Alternatively, in winter the shoreline segment with the highest probability of accumulation above all three thresholds was Corangamite LGA (100%, 100% and 27% for low, moderate and high, respectively). The minimum time for low threshold shoreline accumulation at the Corangamite LGA receptor was 1 day.

The maximum potential shoreline loadings above each shoreline thresholds are presented in Figure 13.7 and Figure 13.8 for summer and winter respectively.

Table 13.4 Summary of oil accumulation across all shorelines. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations per season.

Shoreline Statistics	Summer	Winter
Probability of accumulation on any shoreline (%)	100	100
Absolute minimum time for visible oil to shore (days)	0.96	1.00
Maximum total volume of hydrocarbons ashore (m^3)	206.3	312.1
Average total volume of hydrocarbons ashore (m^3)	124.1	161.7
Maximum length of the shoreline at **10 g/m^2** (km)	220.0	224.0
Average shoreline length (km) at **10 g/m^2** (km)	124.9	131.7
Maximum length of the shoreline at **100 g/m^2** (km)	58.0	62.0
Average shoreline length (km) at **100 g/m^2** (km)	28.6	33.3
Maximum length of the shoreline at **1,000 g/m^2** (km)	2.0	6.0
Average shoreline length (km) at **1,000 g/m^2** (km)	1.2	1.6

Table 13.5 Summary of oil accumulation on individual shoreline receptors. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
LGA Shoreline	Anser Island	10	-	-	61.46	-	-	3	26	0.2	0.7	1.3	-	-	2.7	-	-
	Bass Coast	4	-	-	50.79	-	-	1	15	0.2	0.7	1.1	-	-	1.8	-	-
	Bega Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Colac Otway	98	66	-	2.29	6.83	-	23	400	22.5	56.3	26.6	7.6	-	54.5	14.5	-
	Corangamite	100	99	-	1.54	2.79	-	82	811	63.5	126.8	44.8	15.3	-	55.4	31.8	-
	East Gippsland	1	-	-	103.25	-	-	1	18	0.3	1.1	0.9	-	-	0.9	-	-
	Gabo Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Glenelg	47	1	-	7.58	55.38	-	5	103	4.2	10	9.4	0.9	-	20	0.9	-
	Glennie Group	9	-	-	45.38	-	-	2	20	0.3	1.3	1.5	-	-	2.7	-	-
	Greater Geelong	12	-	-	42.75	-	-	3	94	0.9	7.4	5.2	-	-	14.5	-	-
	Hogan Island Group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Kanowna Island	6	-	-	66.21	-	-	2	12	0.2	0.7	1.2	-	-	1.8	-	-
	Kent Island Group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	King Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lady Julia Percy Island	54	-	-	8.29	-	-	13	90	1.2	2.8	2.8	-	-	5.5	-	-
	Laurence Rocks	36	-	-	16.67	-	-	10	41	0.4	1	1.7	-	-	2.7	-	-
	Montague Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mornington Peninsula	10	-	-	49.33	-	-	2	21	0.6	3.1	2.7	-	-	5.5	-	-
	Moyne	99	92	5	0.96	1.33	25.38	35	1,354	29.3	78.9	28	6.3	1.1	49.1	15.4	1.8
	Norman Island	9	-	-	47.75	-	-	3	23	0.2	0.6	1.1	-	-	1.8	-	-
	Phillip Island	8	-	-	48.13	-	-	2	22	0.5	2.8	2.6	-	-	6.4	-	-
	Rodondo Island	8	-	-	82.42	-	-	3	24	0.2	0.6	1.4	-	-	1.8	-	-
	Shellback Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Skull Rock	4	-	-	66.21	-	-	2	11	< 0.1	0.3	0.9	-	-	0.9	-	-
	South Gippsland	23	-	-	42.92	-	-	2	55	1.5	8.2	7.5	-	-	20	-	-
	Surf Coast	9	-	-	45.54	-	-	2	81	0.8	7.9	8.5	-	-	20.9	-	-
	Warrnambool	62	11	-	5.25	7.63	-	9	160	2.6	12.9	7.2	1.4	-	20	2.7	-
	Wellington	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-LGA Shoreline	Anglesea	5	-	-	45.54	-	-	2	25	0.3	1.9	3.1	-	-	6.4	-	-
	Apollo Bay	64	-	-	5.17	-	-	5	80	1.6	4.9	5.4	-	-	12.7	-	-
	Bay of Islands	99	87	5	0.96	1.33	25.38	64	1,354	24.4	72.7	19.3	6.2	1.1	29.1	13.6	1.8
	Bega Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cape Howe / Mallacoota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cape Liptrap - Northwest	15	-	-	43.17	-	-	2	35	0.4	1.9	2.4	-	-	3.6	-	-
	Cape Nelson	47	1	-	7.58	55.38	-	7	103	3.8	9.4	9	0.9	-	18.2	0.9	-
	Cape Otway West	98	66	-	2.29	6.83	-	42	400	20.3	49.9	22.1	7.6	-	34.5	14.5	-
	Cape Patton	17	-	-	19.88	-	-	3	43	0.7	4.4	5.3	-	-	15.4	-	-
	Childers Cove	88	9	-	3.33	7.63	-	14	179	4.8	18.8	9.8	4	-	19.1	5.5	-
	Croajingolong - West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Discovery Bay - East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Discovery Bay - West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	French Island / Crib Point	4	-	-	80.54	-	-	2	13	< 0.1	0.3	0.9	-	-	0.9	-	-
	Kilcunda	4	-	-	50.79	-	-	2	15	0.2	0.5	1.1	-	-	1.8	-	-

Shoreline Receptor	Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
	Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Lorne	6	-	-	64.79	-	-	2	16	0.2	1.3	2	-	-	4.5	-	-
Marlo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moonlight Head	100	96	-	2.00	2.79	-	93	811	38.5	77.6	21.9	9.3	-	29.1	13.6	-
Mornington Peninsula - South	7	-	-	70.38	-	-	2	15	0.2	1	1.7	-	-	2.7	-	-
Mornington Peninsula - Southwest	6	-	-	49.33	-	-	2	21	0.3	1.8	2	-	-	4.5	-	-
Point Hicks	1	-	-	103.25	-	-	2	18	0.1	0.5	0.9	-	-	0.9	-	-
Port Campbell	100	89	-	1.54	3.08	-	70	677	24.8	61.7	22.6	7	-	26.4	20.9	-
Port Fairy	59	10	-	9.67	31.29	-	6	156	1.9	9.3	3.8	1.5	-	17.3	2.7	-
Port Phillip - Queenscliff	12	-	-	42.75	-	-	2	25	0.3	1.1	2	-	-	3.6	-	-
Portland Bay - East	2	-	-	43.00	-	-	1	12	0.2	0.7	0.9	-	-	0.9	-	-
Portland Bay - West	7	-	-	32.21	-	-	2	15	0.2	0.7	1.3	-	-	1.8	-	-
Snake Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Torquay	4	-	-	45.54	-	-	3	94	1.1	11.8	23.2	-	-	25.4	-	-
Venus Bay	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waratah Bay	2	-	-	87.88	-	-	1	14	< 0.1	0.3	0.9	-	-	0.9	-	-
Warrnambool	46	2	-	5.79	12.5	-	5	150	1.5	7.3	4.8	0.9	-	15.4	0.9	-
Wilsons Promontory - East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wilsons Promontory - West	23	-	-	42.92	-	-	3	55	1.1	6.2	5.8	-	-	16.4	-	-

Table 13.6 Summary of oil accumulation on individual shoreline receptors. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
LGA Shoreline	Anser Island	36	-	-	21.08	-	-	5	33	0.3	0.9	1.5	-	-	2.7	-	-
	Bass Coast	5	-	-	30.42	-	-	2	15	0.4	1.6	1.3	-	-	1.8	-	-
	Bega Valley	4	-	-	54.13	-	-	2	17	0.3	1	1.4	-	-	1.8	-	-
	Colac Otway	100	93	-	2.88	7	-	28	406	31.8	61.2	36.4	8.2	-	61.8	17.3	-
	Corangamite	100	100	27	1.00	1.25	49.21	128	1,845	99.2	225	48.9	18.6	1.4	58.2	34.5	5.5
	East Gippsland	36	-	-	27.92	-	-	2	65	1.2	3.8	2.8	-	-	6.4	-	-
	Gabo Island	4	-	-	90.25	-	-	2	21	0.1	0.6	1.8	-	-	1.8	-	-
	Glenelg	8	-	-	37.67	-	-	2	40	1.4	7.1	5.6	-	-	16.4	-	-
	Glennie Group	39	-	-	21.67	-	-	4	48	0.6	3	2.8	-	-	8.2	-	-
	Greater Geelong	4	-	-	12.04	-	-	2	75	0.3	6.5	5.9	-	-	13.6	-	-
	Hogan Island Group	1	-	-	44.63	-	-	1	11	0.1	0.4	0.9	-	-	0.9	-	-
	Kanowna Island	19	-	-	34.38	-	-	3	22	0.3	0.8	1.7	-	-	2.7	-	-
	Kent Island Group	1	-	-	32.29	-	-	1	16	< 0.1	0.4	0.9	-	-	0.9	-	-
	King Island	11	-	-	39.92	-	-	1	25	0.5	1.7	1.2	-	-	1.8	-	-
	Lady Julia Percy Island	13	-	-	23.29	-	-	4	68	0.3	2.2	2	-	-	3.6	-	-
	Laurence Rocks	4	-	-	66.96	-	-	5	17	0.2	0.4	1.1	-	-	1.8	-	-
	Montague Island	2	-	-	102.21	-	-	2	11	< 0.1	0.4	0.9	-	-	0.9	-	-
	Mornington Peninsula	21	-	-	13.83	-	-	2	28	0.8	3.8	2.8	-	-	10	-	-
	Moyne	100	78	-	1.21	1.71	-	34	718	20	90.6	19.8	5.3	-	75.4	20.9	-
	Norman Island	8	-	-	31.38	-	-	3	22	0.2	0.7	1.4	-	-	1.8	-	-
	Phillip Island	29	-	-	18.79	-	-	2	47	0.8	3.3	2.8	-	-	7.3	-	-
	Rodondo Island	18	-	-	29.67	-	-	4	40	0.2	1	1.7	-	-	2.7	-	-
	Shellback Island	1	-	-	45.38	-	-	3	11	< 0.1	0.2	0.9	-	-	0.9	-	-
	Skull Rock	14	-	-	42.63	-	-	4	20	0.1	0.5	1.2	-	-	1.8	-	-
	South Gippsland	59	-	-	20.75	-	-	4	83	2.7	8.3	7.1	-	-	19.1	-	-
	Surf Coast	12	-	-	10.75	-	-	2	86	0.8	9.5	4.2	-	-	20	-	-
	Warrnambool	50	15	-	5.00	13.54	-	12	260	3.1	19	8.4	1.4	-	20.9	3.6	-
	Wellington	1	-	-	78.33	-	-	1	10	0.3	2.2	0.9	-	-	0.9	-	-
Sub-LGA Shoreline	Anglesea	4	-	-	14.08	-	-	2	23	0.3	2	2.5	-	-	5.5	-	-
	Apollo Bay	91	-	-	2.96	-	-	8	96	2.6	7.2	6.8	-	-	19.1	-	-
	Bay of Islands	100	74	-	1.21	1.71	-	48	718	16.9	62.6	14.5	5.2	-	25.4	16.4	-
	Bega Valley	4	-	-	54.13	-	-	2	17	0.3	1	1.4	-	-	1.8	-	-
	Cape Howe / Mallacoota	2	-	-	93.75	-	-	2	11	0.1	0.6	0.9	-	-	0.9	-	-
	Cape Liptrap - Northwest	31	-	-	20.75	-	-	3	45	0.6	2.1	2.4	-	-	5.5	-	-
	Cape Nelson	6	-	-	66.54	-	-	2	40	1	4.4	5.8	-	-	12.7	-	-
	Cape Otway West	100	93	-	2.88	7	-	56	406	27.7	51.1	26.7	8.2	-	33.6	17.3	-
	Cape Patton	61	-	-	5.25	-	-	5	45	1.5	4.8	5.6	-	-	16.4	-	-
	Childers Cove	59	15	-	2.50	22.67	-	12	187	3.9	22	9.6	2	-	18.2	6.4	-
	Croajingolong - West	16	-	-	44.79	-	-	2	21	0.2	0.8	0.9	-	-	0.9	-	-
	Discovery Bay - East	1	-	-	104.79	-	-	1	10	0.3	1	0.9	-	-	0.9	-	-
	Discovery Bay - West	1	-	-	104.25	-	-	1	12	0.2	1.1	0.9	-	-	0.9	-	-
	French Island / Crib Point	6	-	-	30.25	-	-	2	20	< 0.1	0.4	0.9	-	-	0.9	-	-
	Kilcunda	2	-	-	67.79	-	-	2	12	0.2	0.5	0.9	-	-	0.9	-	-

Shoreline Receptor	Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
	Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Lorne	12	-	-	10.42	-	-	2	20	0.4	1.5	2.1	-	-	4.5	-	-
Marlo	4	-	-	89.00	-	-	1	19	0.1	0.5	0.9	-	-	0.9	-	-
Moonlight Head	100	100	24	1.96	4.33	49.21	166	1,845	68.8	161	26.3	11.4	1.3	30.9	16.4	5.5
Mornington Peninsula - South	10	-	-	13.83	-	-	2	24	0.3	1.4	2.4	-	-	5.5	-	-
Mornington Peninsula - Southwest	15	-	-	17.63	-	-	2	28	0.3	2.2	2	-	-	6.4	-	-
Point Hicks	36	-	-	27.92	-	-	4	65	0.6	2.3	2.2	-	-	3.6	-	-
Port Campbell	99	89	5	1.00	1.25	66.96	86	1,202	30.3	87.5	22.3	8.1	1.3	26.4	20	1.8
Port Fairy	36	6	-	11.96	13.38	-	5	185	1.7	13.2	4.3	2	-	26.4	2.7	-
Port Phillip - Queenscliff	2	-	-	17.54	-	-	1	16	0.1	1	2.7	-	-	3.6	-	-
Portland Bay - East	2	-	-	25.42	-	-	2	16	0.3	1.5	1.8	-	-	2.7	-	-
Portland Bay - West	3	-	-	37.67	-	-	2	21	0.6	2.7	2.7	-	-	5.5	-	-
Snake Island	1	-	-	78.33	-	-	1	10	< 0.1	0.4	0.9	-	-	0.9	-	-
Torquay	3	-	-	12.04	-	-	2	86	0.5	12.6	16.1	-	-	24.5	-	-
Venus Bay	4	-	-	30.42	-	-	2	15	0.2	1.3	1.1	-	-	1.8	-	-
Waratah Bay	5	-	-	39.17	-	-	1	23	0.1	0.7	0.9	-	-	0.9	-	-
Warrnambool	38	4	-	6.08	13.54	-	7	260	1.9	16.6	6	1.6	-	23.6	1.8	-
Wilsons Promontory - East	1	-	-	38.79	-	-	1	14	0.1	0.7	0.9	-	-	0.9	-	-
Wilsons Promontory - West	58	-	-	29.88	-	-	5	83	1.9	6.1	5.9	-	-	14.5	-	-

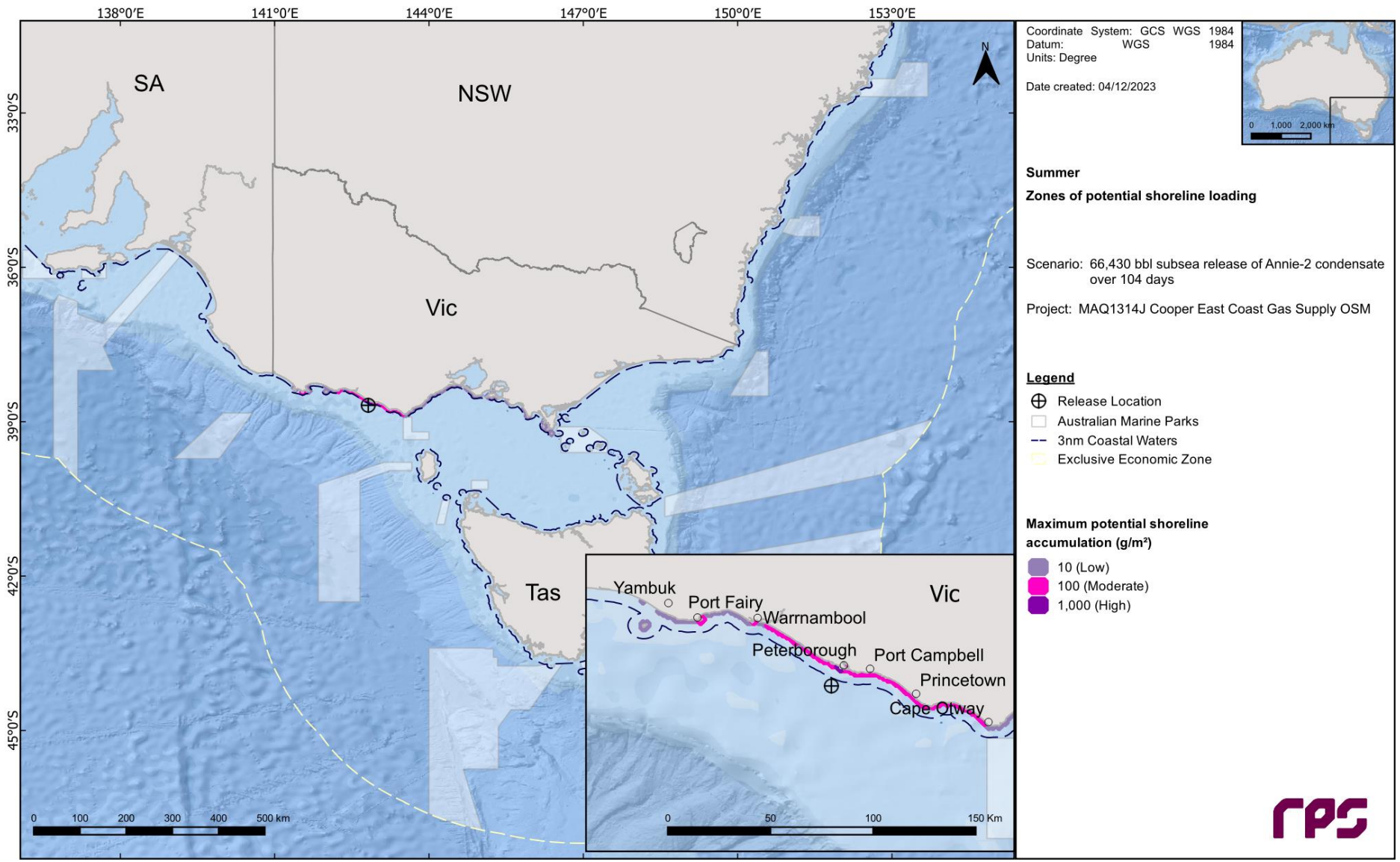

Figure 13.7 Maximum potential shoreline accumulation in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

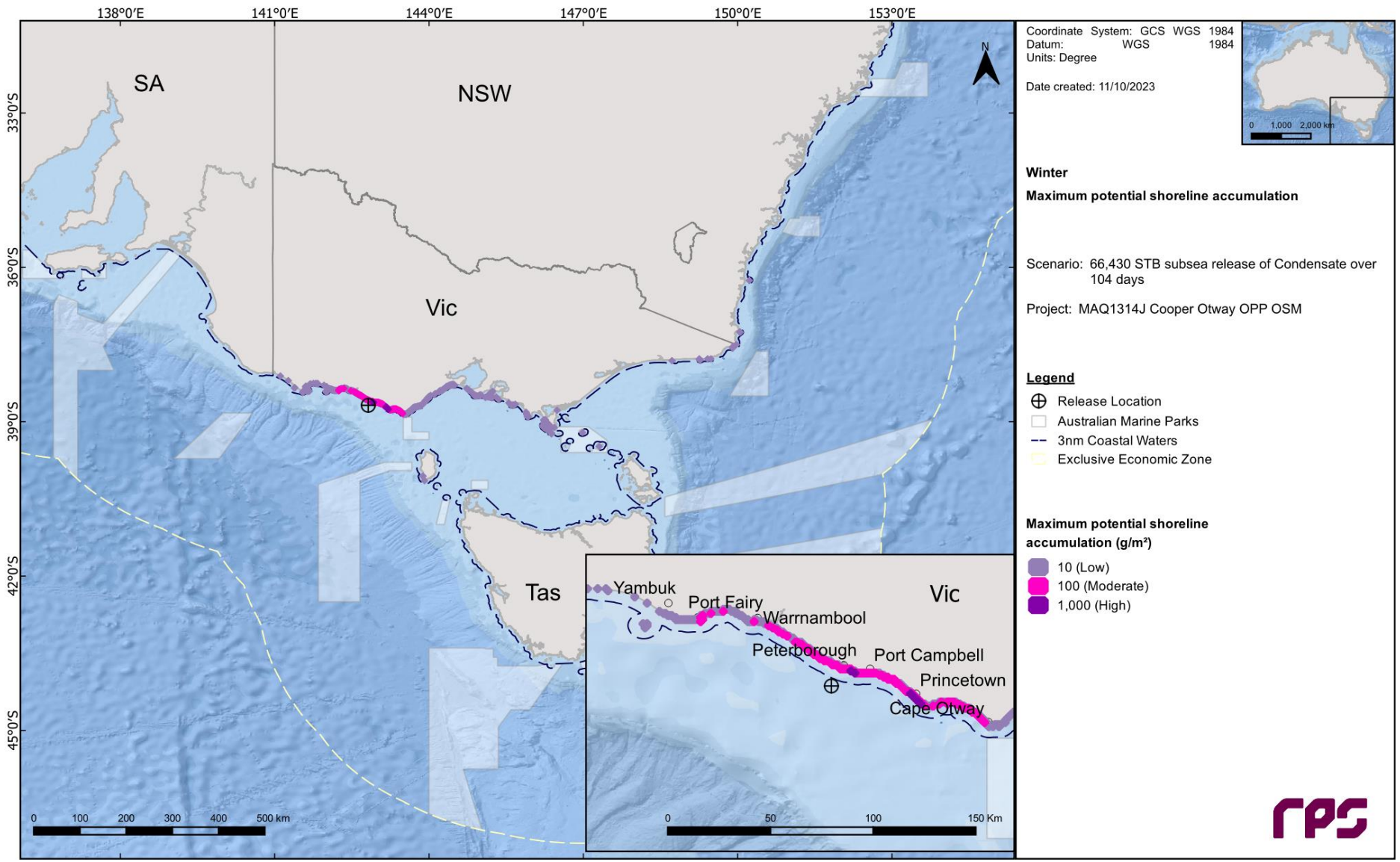

Figure 13.8 Maximum potential shoreline accumulation in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

13.1.3 In-water exposure

13.1.3.1 Dissolved Hydrocarbons

Table 13.7 summarises the potential in-water exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer.

A total of 20 BIAs were predicted to be exposed to dissolved hydrocarbon at, or above, the low threshold. Excluding the BIAs that the release location resides within (see Section 10.3), the highest probability of low exposure was 10% during summer and 33% during winter at the Short-tailed Shearwater - Foraging BIA receptor.

The maximum dissolved hydrocarbon concentration at any given receptor(s) was shown to be 35.3 ppb and 41.0 ppb during summer and winter respectively.

Table 13.8 presents the predicted minimum time to dissolved hydrocarbon exposure and maximum residence time for dissolved hydrocarbon exposure to individual receptors, in the 0-10 m depth layer, for all thresholds assessed.

Figure 13.9 and Figure 13.10 present the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layer for each season whilst Figure 13.11 and Figure 13.12 present the maximum residence time of dissolved hydrocarbon exposure for the NOPSEMA thresholds.

Table 13.7 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer				Winter			
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)		
			Low	Moderate	High		Low	Moderate	High
AMP	Apollo	14.5	1	-	-	14.8	1	-	-
BIA	Antipodean Albatross - Foraging*	30.4	13	-	-	23.8	11	-	-
	Australasian Gannet - Foraging	14.5	1	-	-	6.9	-	-	-
	Black-browed Albatross - Foraging*	30.4	13	-	-	23.8	11	-	-
	Bullers Albatross - Foraging*	30.4	13	-	-	23.8	11	-	-
	Campbell Albatross - Foraging*	30.4	13	-	-	23.8	11	-	-
	Common Diving-petrel - Foraging*	35.3	24	-	-	41	50	-	-
	Indian Yellow-nosed Albatross - Foraging*	30.4	13	-	-	23.8	11	-	-
	Pygmy Blue Whale - Distribution*	35.3	24	-	-	41.0	50	-	-
	Pygmy Blue Whale - Foraging*	35.3	24	-	-	41.0	50	-	-
	Pygmy Blue Whale - Foraging annual high use area*	35.3	24	-	-	41.0	50	-	-
	Pygmy Blue Whale - Known Foraging Area	16.6	1	-	-	21.6	3	-	-
	Short-tailed Shearwater - Foraging	21.9	10	-	-	41.0	33	-	-
	Shy Albatross - Foraging*	35.3	24	-	-	41.0	50	-	-
	Southern Right Whale - Aggregation	20.1	2	-	-	19.4	2	-	-
	Southern Right Whale - Known Core Range*	35.3	24	-	-	41.0	50	-	-
	Wandering Albatross - Foraging*	30.4	13	-	-	23.8	11	-	-
	Wedge-tailed Shearwater - Foraging*	35.3	24	-	-	41.0	50	-	-
	White Shark - Distribution*	30.4	13	-	-	23.8	11	-	-
	White Shark - Foraging	17.7	1	-	-	8.9	-	-	-
	White-faced Storm-petrel - Foraging	16.6	1	-	-	21.6	3	-	-
IBRA	Otway Plain	17.3	3	-	-	17.1	9	-	-
	Otway Ranges	15.5	4	-	-	23.2	9	-	-

Receptor		Summer				Winter			
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)		
			Low	Moderate	High		Low	Moderate	High
	Warrnambool Plain	29.6	23	-	-	35.1	50	-	-
IMCRA	Central Bass Strait	16.6	1	-	-	21.6	3	-	-
	Central Victoria	16.1	1	-	-	17.2	2	-	-
	Otway*	35.3	24	-	-	41.0	50	-	-
KEF	Bonney Coast Upwelling	11.1	1	-	-	5.9	-	-	-
MNP	Twelve Apostles	27.7	20	-	-	33.8	40	-	-
RSB	Bravenes Rock	11.2	2	-	-	10.8	1	-	-
Nearshore Waters	Colac Otway	17.3	3	-	-	18.2	9	-	-
	Corangamite	29.6	23	-	-	35.1	48	-	-
	Moyne	11.5	1	-	-	13.2	1	-	-
State Waters	Victoria State Waters	35.3	24	-	-	41.0	50	-	-
Nearshore Waters (Sub-LGA)	Apollo Bay	9.6	-	-	-	13.0	2	-	-
	Bay of Islands	11.5	1	-	-	13.2	1	-	-
	Cape Otway West	17.3	3	-	-	18.2	9	-	-
	Moonlight Head	29.6	23	-	-	35.1	50	-	-
	Port Campbell	20.6	6	-	-	15.3	2	-	-

*The release location resides within the receptor boundaries.

Table 13.8 Predicted minimum time to dissolved hydrocarbon exposure and maximum residence time for dissolved hydrocarbon exposure to individual receptors in the 0-10 m depth layer. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer						Winter					
		Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
AMP	Apollo	9.71	-	-	0.04	-	-	6.29	-	-	0.04	-	-
BIA	Antipodean Albatross - Foraging*	2.46	-	-	0.13	-	-	1.63	-	-	0.21	-	-
	Australasian Gannet - Foraging	5.38	-	-	0.04	-	-	-	-	-	-	-	-
	Black-browed Albatross - Foraging*	2.46	-	-	0.13	-	-	1.63	-	-	0.21	-	-
	Bullers Albatross - Foraging*	2.46	-	-	0.13	-	-	1.63	-	-	0.21	-	-
	Campbell Albatross - Foraging*	2.46	-	-	0.13	-	-	1.63	-	-	0.21	-	-
	Common Diving-petrel - Foraging*	2.46	-	-	0.25	-	-	1.63	-	-	0.21	-	-
	Indian Yellow-nosed Albatross - Foraging*	2.46	-	-	0.13	-	-	1.63	-	-	0.21	-	-
	Pygmy Blue Whale - Distribution*	2.46	-	-	0.25	-	-	1.63	-	-	0.21	-	-
	Pygmy Blue Whale - Foraging*	2.46	-	-	0.25	-	-	1.63	-	-	0.21	-	-
	Pygmy Blue Whale - Foraging annual high use area*	2.46	-	-	0.25	-	-	1.63	-	-	0.21	-	-
	Pygmy Blue Whale - Known Foraging Area	9.96	-	-	0.04	-	-	6.38	-	-	0.08	-	-
	Short-tailed Shearwater - Foraging	4.63	-	-	0.08	-	-	3.42	-	-	0.13	-	-
	Shy Albatross - Foraging*	2.46	-	-	0.25	-	-	1.63	-	-	0.21	-	-
	Southern Right Whale - Aggregation	3.33	-	-	0.08	-	-	3.79	-	-	0.13	-	-
	Southern Right Whale - Known Core Range*	2.46	-	-	0.25	-	-	1.63	-	-	0.21	-	-
	Wandering Albatross - Foraging*	2.46	-	-	0.13	-	-	1.63	-	-	0.21	-	-
	Wedge-tailed Shearwater - Foraging*	2.46	-	-	0.25	-	-	1.63	-	-	0.21	-	-
	White Shark - Distribution*	2.46	-	-	0.13	-	-	1.63	-	-	0.21	-	-
	White Shark - Foraging	5.38	-	-	0.04	-	-	78.46	-	-	0.04	-	-
	White-faced Storm-petrel - Foraging	9.96	-	-	0.04	-	-	6.42	-	-	0.08	-	-
IBRA	Otway Plain	11.42	-	-	0.08	-	-	4.75	-	-	0.08	-	-

Receptor		Summer						Winter					
		Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	Otway Ranges	11.46	-	-	0.08	-	-	4.29	-	-	0.08	-	-
	Warrnambool Plain	4.63	-	-	0.17	-	-	2.96	-	-	0.21	-	-
IMCRA	Central Bass Strait	10.29	-	-	0.04	-	-	7.33	-	-	0.08	-	-
	Central Victoria	9.96	-	-	0.04	-	-	7	-	-	0.08	-	-
	Otway*	2.46	-	-	0.25	-	-	1.63	-	-	0.21	-	-
KEF	Bonney Coast Upwelling	11.67	-	-	0.04	-	-	-	-	-	-	-	-
MNP	Twelve Apostles	3.54	-	-	0.17	-	-	2.96	-	-	0.21	-	-
RSB	Bravenes Rock	30.88	-	-	0.04	-	-	23.79	-	-	0.04	-	-
Nearshore Waters	Colac Otway	11.42	-	-	0.08	-	-	4.29	-	-	0.08	-	-
	Corangamite	4.63	-	-	0.17	-	-	2.96	-	-	0.21	-	-
	Moyne	11.33	-	-	0.04	-	-	4.5	-	-	0.13	-	-
State Waters	Victoria State Waters	3.54	-	-	0.25	-	-	2.96	-	-	0.21	-	-
Nearshore Waters (Sub-LGA)	Apollo Bay	-	-	-	-	-	-	10.21	-	-	0.08	-	-
	Bay of Islands	11.33	-	-	0.04	-	-	4.5	-	-	0.13	-	-
	Cape Otway West	11.42	-	-	0.08	-	-	4.29	-	-	0.08	-	-
	Moonlight Head	4.54	-	-	0.17	-	-	2.96	-	-	0.21	-	-
	Port Campbell	5.17	-	-	0.08	-	-	3.88	-	-	0.08	-	-

*The release location resides within the receptor boundaries.

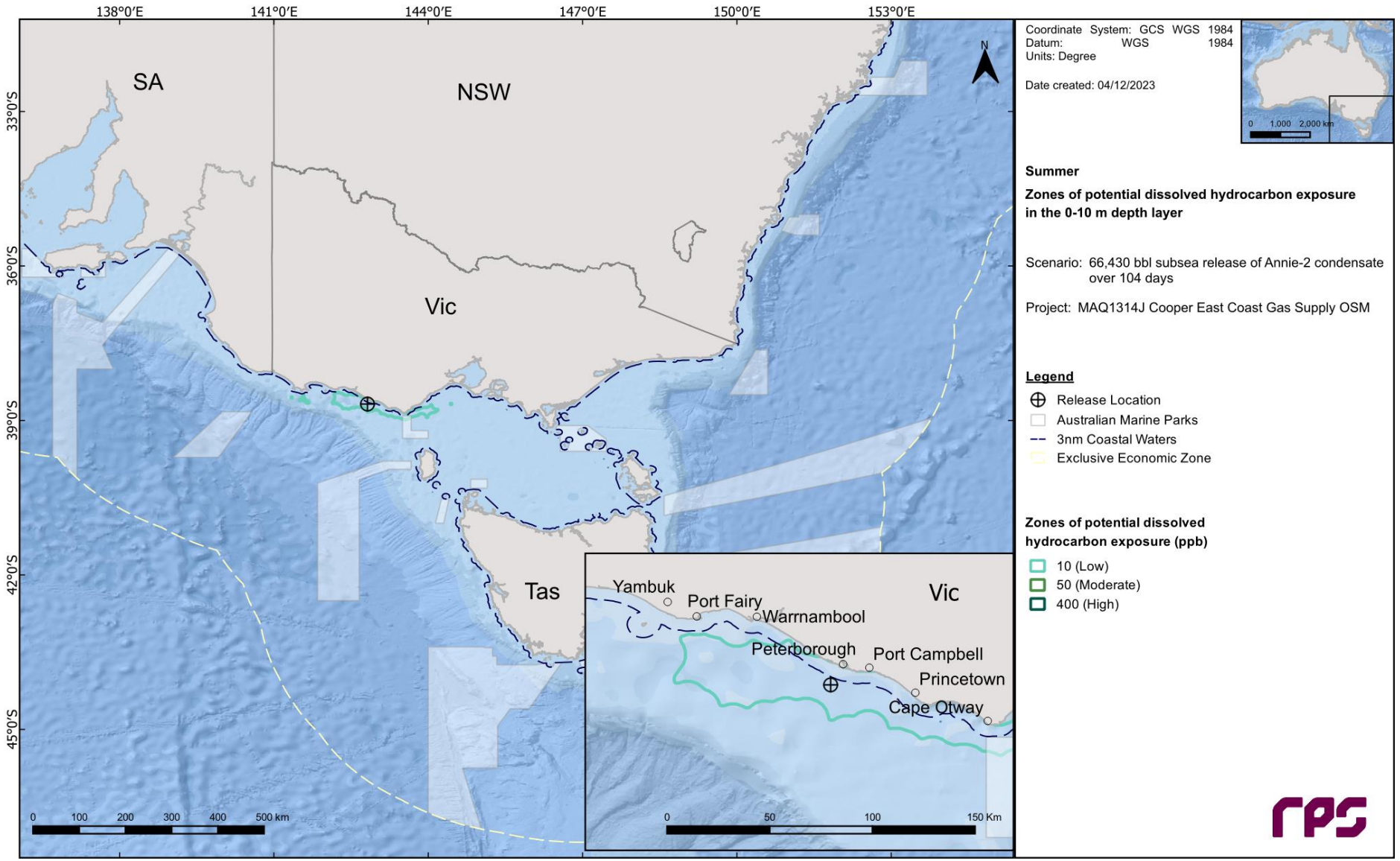

Figure 13.9 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

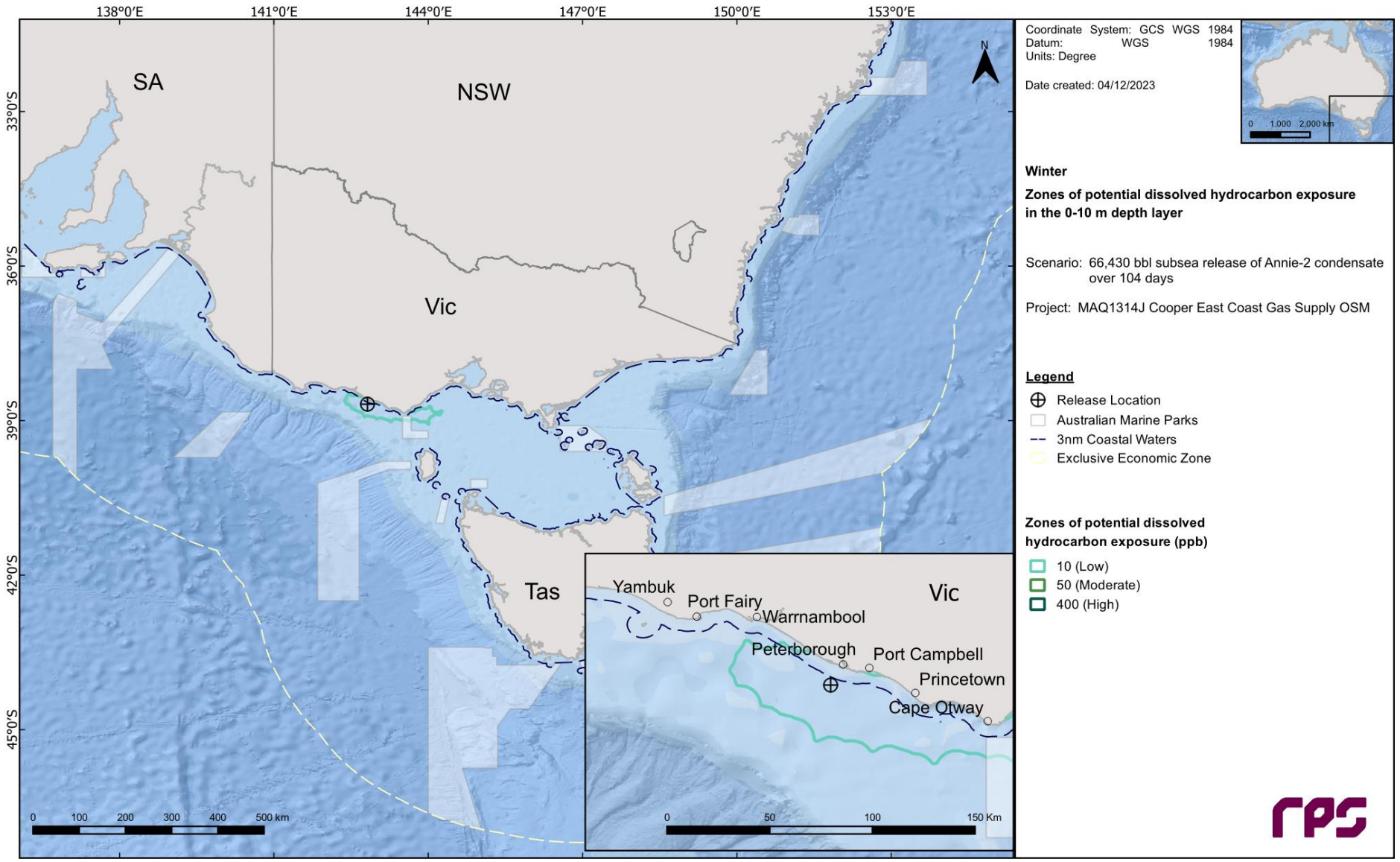

Figure 13.10 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

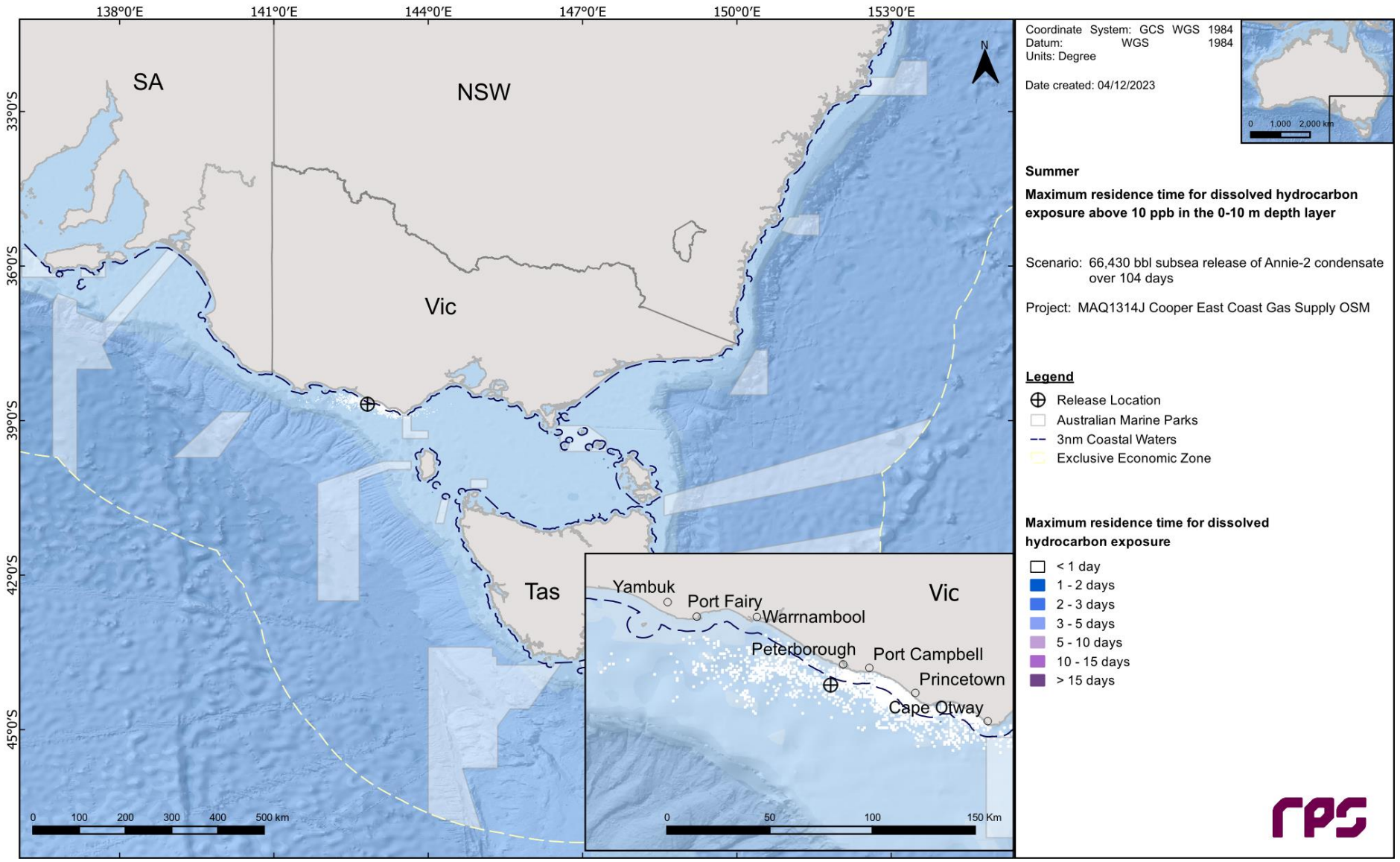

Figure 13.11 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

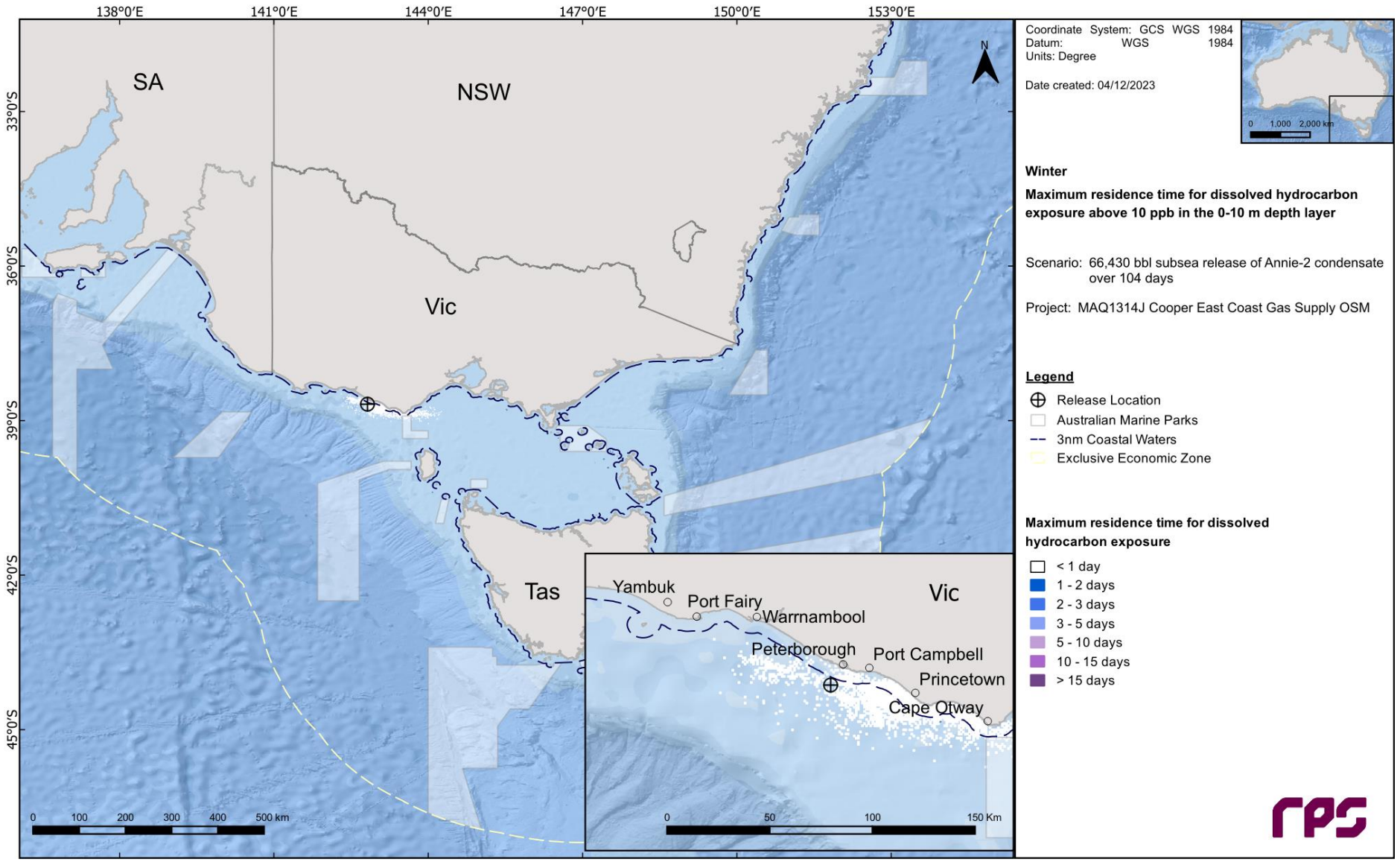

Figure 13.12 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

13.1.3.2 Entrained Hydrocarbons

Table 13.9 summarises the potential in-water exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer.

Many receptors were exposed above the low and high thresholds, however most of these receptors (predominantly BIAs) coincided with the release location.

In summer conditions, the highest probability of low entrained hydrocarbon exposure was recorded at 100% for receptors that the release location doesn't reside within, including Short-tailed Shearwater – Foraging, Southern Right Whale – Aggregation BIAs and Warrnambool Plain IBRA. Additional receptors including near-shore sub-LGA waters, and AMPs were predicted with entrained hydrocarbon exposure (refer to Table 13.9). Similarly, during winter several receptors that the release location doesn't reside within revealed probabilities of 100% for low entrained hydrocarbon exposure.

Table 13.10 presents the predicted minimum time to entrained hydrocarbon exposure and maximum residence time for entrained hydrocarbon exposure to individual receptors in the 0-10 m depth layer, for all thresholds assessed.

Figure 13.13 and Figure 13.14 present the zones of potential entrained hydrocarbon exposure for the 0-10 m depth layer for each season whilst Figure 13.15 to Figure 13.18 present the maximum residence time of entrained hydrocarbon exposure for the NOPSEMA thresholds.

Table 13.9 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
AMP	Apollo	119.1	86	6	124.6	97	5
	Beagle	25.0	36	-	26.9	34	-
	Nelson	15.5	7	-	14.3	1	-
	Zeehan	17.0	9	-	15.6	8	-
BIA	Antipodean Albatross - Foraging*	647.2	100	100	663.8	100	100
	Australasian Gannet - Foraging	87.5	71	-	74.5	66	-
	Australian Sea Lion - Foraging	13.0	7	-	6.9	-	-
	Black Petrel - Foraging	15.4	6	-	11.7	2	-
	Black-browed Albatross - Foraging*	647.2	100	100	663.8	100	100
	Black-faced Cormorant - Foraging	16.0	3	-	14	8	-
	Bullers Albatross - Foraging*	647.2	100	100	663.8	100	100
	Campbell Albatross - Foraging*	647.2	100	100	663.8	100	100
	Common Diving-petrel - Foraging*	647.2	100	100	663.8	100	100
	Crested Tern - Breeding	8.1	-	-	10.5	1	-
	Crested Tern - Foraging	9.3	-	-	11.7	2	-
	Flesh-footed Shearwater - Foraging	15.4	6	-	11.7	2	-
	Great-winged Petrel - Foraging	15.4	6	-	9.2	-	-
	Grey Nurse Shark - Foraging	16	6	-	13.3	4	-
	Grey Nurse Shark - Migration	26.5	7	-	12.9	4	-
	Humpback Whale - Foraging	26.8	7	-	13.3	5	-
	Indian Yellow-nosed Albatross - Foraging*	647.2	100	100	663.8	100	100
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	10.6	1	-	12.5	2	-
	Little Penguin - Breeding	8.4	-	-	11.7	2	-
	Little Penguin - Foraging	24.9	43	-	28.8	61	-
	Northern Giant Petrel - Foraging	15.4	6	-	9.2	-	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Pygmy Blue Whale - Distribution*	647.2	100	100	663.8	100	100
	Pygmy Blue Whale - Foraging*	647.2	100	100	663.8	100	100
	Pygmy Blue Whale - Foraging annual high use area*	647.2	100	100	663.8	100	100
	Pygmy Blue Whale - Known Foraging Area	125.8	86	4	113.1	97	6
	Short-tailed Shearwater - Foraging	254.5	100	95	256.5	100	99
	Shy Albatross - Foraging*	647.2	100	100	663.8	100	100
	Sooty Shearwater - Foraging	24.3	7	-	13.3	4	-
	Southern Giant Petrel - Foraging	15.4	6	-	9.2	-	-
	Southern Right Whale - Aggregation	347.5	100	83	287.9	98	76
	Southern Right Whale - Connecting Habitat	10.3	1	-	9.8	-	-
	Southern Right Whale - Known Core Range*	647.2	100	100	663.8	100	100
	Wandering Albatross - Foraging*	647.2	100	100	663.8	100	100
	Wedge-tailed Shearwater - Foraging*	647.2	100	100	663.8	100	100
	White Shark - Breeding	17.9	18	-	18.0	27	-
	White Shark - Distribution*	647.2	100	100	663.8	100	100
	White Shark - Foraging	99.1	84	-	111.7	73	2
	White-capped Albatross - Foraging	15.4	6	-	9.2	-	-
	White-faced Storm-petrel - Breeding	16.0	6	-	11.7	2	-
	White-faced Storm-petrel - Foraging	110.8	86	4	103.4	97	2
	Wilsons Storm Petrel - Migration	15.4	6	-	9.2	-	-
IBRA	Bridgewater	80.0	42	-	71.0	9	-
	East Gippsland Lowlands	8.0	-	-	13.0	2	-
	Flinders	19.1	11	-	23.0	13	-
	Gippsland Plain	48.7	31	-	54.4	52	-
	Glenelg Plain	87.5	52	-	74.0	10	-
	Otway Plain	243.6	99	59	183.1	100	67

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Otway Ranges	202.1	99	67	206.6	100	76
	Strzelecki Ranges	19.6	26	-	26.8	50	-
	Warrnambool Plain	475.1	100	99	441.0	100	100
	Wilsons Promontory	59.4	42	-	60.4	60	-
IMCRA	Batemans Shelf	13.0	5	-	11.7	2	-
	Central Bass Strait	110.8	85	3	103.4	95	2
	Central Victoria	112.7	86	4	107.6	97	2
	Flinders	60.8	43	-	61.0	61	-
	Otway*	647.2	100	100	663.8	100	100
	Twofold Shelf	26.8	12	-	21.1	16	-
	Victorian Embayments	27.4	24	-	20.5	40	-
KEF	Bonney Coast Upwelling	87.5	71	-	85.5	50	-
	Canyons on the Eastern Continental Slope	15.4	6	-	5.8	-	-
	Shelf rocky reefs	8.5	-	-	10.8	1	-
	Upwelling East of Eden	26.8	10	-	15.1	8	-
	West Tasmania Canyons	29.6	27	-	38.2	22	-
MNP	Bunurong	22.9	15	-	21.4	28	-
	Cape Howe	10.1	1	-	13.8	2	-
	Churchill Island	15.2	12	-	18.9	12	-
	Discovery Bay	36.6	30	-	29	2	-
	Point Addis	43.0	23	-	41.7	21	-
	Port Phillip Heads	27.4	25	-	21.5	16	-
	Twelve Apostles	483.8	100	99	445.8	100	100
	Wilsons Promontory	58.8	43	-	60.3	60	-
MP	Batemans	8.1	-	-	10.5	1	-
	Lower South East	16.1	3	-	11.4	1	-
MS	Mushroom Reef	16.1	18	-	18.0	25	-
NPS4	Bunurong Marine Park	26.6	21	-	30	36	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Wilsons Promontory Marine Park	47.3	32	-	50.9	52	-
RAMSAR	Port Phillip Bay Western Shoreline and Bellarine Peninsula	19.7	6	-	15.5	4	-
	Western Port	15.2	12	-	18.9	12	-
RSB	Bravenes Rock	205.4	95	24	123.0	99	12
	Cody Bank	16.0	20	-	19.0	40	-
	Cutter Rock	22.3	17	-	25.5	15	-
	New Zealand Star Bank	13.7	5	-	12.0	2	-
Nearshore Waters	Anser Island	53.1	41	-	52.3	59	-
	Bass Coast	29.5	23	-	33.1	44	-
	Bega Valley	8.1	-	-	12.1	2	-
	Colac Otway	243.6	99	59	183.1	100	67
	Corangamite	475.1	100	99	441.0	100	100
	Curtis Island	19.1	11	-	23.0	7	-
	East Gippsland	8.0	-	-	13.0	2	-
	French Island	9.7	-	-	11.8	2	-
	Gabo Island	8.3	-	-	12.6	2	-
	Glenelg	87.5	52	-	74.0	10	-
	Glennie Group	57.9	43	-	57.6	60	-
	Grant	12.4	4	-	9.0	-	-
	Greater Geelong	48.6	25	-	40.0	12	-
	Hogan Island Group	16.1	11	-	20.2	13	-
	Kanowna Island	49.7	41	-	47.5	59	-
	Lady Julia Percy Island	76.5	62	-	71.1	25	-
	Laurence Rocks	69.7	47	-	62.4	9	-
	Moncoeur Islands	22.4	33	-	26.7	36	-
	Mornington Peninsula	28.9	30	-	31.5	42	-
	Moyne	308.3	100	79	377.8	100	75
	Mud Island	12.5	4	-	11.2	3	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Norman Island	59.4	39	-	60.4	57	-
	Phillip Island	21.6	28	-	22.3	44	-
	Rodondo Island	33.9	39	-	33.8	49	-
	Seal Islands	7.4	-	-	10.8	1	-
	Shellback Island	38.0	29	-	41.8	44	-
	Skull Rock	46.9	41	-	44.6	59	-
	South Gippsland	58.3	41	-	58.0	60	-
	Surf Coast	44.3	23	-	40.3	40	-
	Warrnambool	199.1	84	4	159.7	56	12
State Waters	New South Wales	9.7	-	-	12.5	2	-
	South Australia State Waters	17.4	10	-	12.1	2	-
	Tasmania State Waters	23.4	15	-	25.5	15	-
	Victoria State Waters	499.5	100	100	462.8	100	100
Nearshore Waters (Sub-LGA)	Anglesea	34.6	18	-	30.9	11	-
	Apollo Bay	133.7	86	7	101.4	97	1
	Bay of Islands	308.3	100	79	377.8	100	75
	Bega Valley	8.1	-	-	12.1	2	-
	Cape Howe / Mallacoota	7.7	-	-	13.0	2	-
	Cape Liptrap - Northwest	25.5	28	-	29.0	52	-
	Cape Nelson	87.5	52	-	74.0	10	-
	Cape Otway West	249.8	99	59	183.1	100	67
	Cape Patton	49.9	76	-	60.2	94	-
	Childers Cove	210.6	93	12	176.2	75	14
	Discovery Bay - East	33.3	18	-	27.2	1	-
	Discovery Bay - West	19.2	15	-	19.6	1	-
	French Island / Crib Point	8.0	-	-	11.5	2	-
	French Island / San Remo	14.1	20	-	19.2	18	-
	Kilcunda	29.5	23	-	33.1	44	-

Receptor		Summer			Winter		
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High		Low	High
	Lorne	30.8	23	-	26.6	46	-
	Moonlight Head	483.8	100	99	445.8	100	100
	Mornington Peninsula - South	21.1	23	-	21.2	40	-
	Mornington Peninsula - Southwest	28.9	30	-	31.7	42	-
	Port Campbell	426.8	100	86	346.1	100	88
	Port Fairy	68.3	62	-	104.6	31	1
	Port Phillip - Queenscliff	34.4	25	-	29.3	12	-
	Port Phillip - Sorrento Shore	26.4	25	-	24.4	27	-
	Port Phillip Heads	25.1	15	-	20.5	9	-
	Portland Bay - East	38.3	46	-	38.8	10	-
	Portland Bay - West	63.6	31	-	57.4	7	-
	Torquay	48.6	16	-	40.3	10	-
	Venus Bay	27.6	23	-	32.2	40	-
	Waratah Bay	19.6	26	-	26.8	50	-
	Warrnambool	103.3	66	2	121	45	3
	Westernport	15.2	16	-	15.6	18	-
	Wilsons Promontory - East	37.0	38	-	34.1	53	-
	Wilsons Promontory - West	58.3	41	-	58.0	60	-

*The release location resides within the receptor boundaries.

Table 13.10 Predicted minimum time to entrained hydrocarbon exposure and maximum residence time for entrained hydrocarbon exposure to individual receptors in the 0-10 m depth layer. Results are based on a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations per season.

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
AMP	Apollo	3.13	24.42	30.29	0.21	2.00	8.25	11.54	0.21
	Beagle	26.46	-	6.63	-	25.63	-	4	-
	Nelson	20.04	-	1.38	-	84.88	-	1	-
	Zeehan	26.17	-	2.21	-	18.58	-	0.71	-
BIA	Antipodean Albatross - Foraging*	0.04	0.08	93.08	14.96	0.04	0.08	104.75	15.08
	Australasian Gannet - Foraging	2.29	-	84.17	-	6.25	-	55.04	-
	Australian Sea Lion - Foraging	11.38	-	0.67	-	-	-	-	-
	Black Petrel - Foraging	42.83	-	0.54	-	54.83	-	0.08	-
	Black-browed Albatross - Foraging*	0.04	0.08	93.08	15.46	0.04	0.08	104.75	15.08
	Black-faced Cormorant - Foraging	29.71	-	0.29	-	17.92	-	0.38	-
	Bullers Albatross - Foraging*	0.04	0.08	93.08	15.46	0.04	0.08	104.75	15.08
	Campbell Albatross - Foraging*	0.04	0.08	93.08	15.46	0.04	0.08	104.75	15.08
	Common Diving-petrel - Foraging*	0.04	0.08	93.08	22.25	0.04	0.08	109.71	32.5
	Crested Tern - Breeding	-	-	-	-	55.08	-	0.04	-
	Crested Tern - Foraging	-	-	-	-	54.83	-	0.08	-
	Flesh-footed Shearwater - Foraging	42.83	-	0.54	-	54.83	-	0.08	-
	Great-winged Petrel - Foraging	42.83	-	0.54	-	-	-	-	-
	Grey Nurse Shark - Foraging	40.33	-	0.92	-	49.33	-	0.13	-
	Grey Nurse Shark - Migration	40.04	-	1.67	-	49.08	-	0.17	-
	Humpback Whale - Foraging	39.71	-	1.67	-	36.88	-	0.25	-
	Indian Yellow-nosed Albatross - Foraging*	0.04	0.08	93.08	15.46	0.04	0.08	104.75	15.08
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	73.33	-	0.04	-	48.63	-	0.25	-
	Little Penguin –– Breeding	-	-	-	-	54.83	-	0.08	-
	Little Penguin - Foraging	26.42	-	14.88	-	10.08	-	20.42	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Northern Giant Petrel - Foraging	42.83	-	0.54	-	-	-	-	-
	Pygmy Blue Whale - Distribution*	0.04	0.08	93.08	22.25	0.04	0.08	109.71	32.5
	Pygmy Blue Whale - Foraging*	0.04	0.08	93.08	22.25	0.04	0.08	109.71	32.5
	Pygmy Blue Whale - Foraging annual high use area*	0.04	0.08	93.08	22.25	0.04	0.08	109.71	32.5
	Pygmy Blue Whale - Known Foraging Area	3.17	24.54	31.42	0.25	2.00	8.33	30.5	0.08
	Short-tailed Shearwater - Foraging	0.79	2.00	93.08	20.29	0.92	3.21	104.92	11.04
	Shy Albatross - Foraging*	0.04	0.08	93.08	22.25	0.04	0.08	109.71	32.5
	Sooty Shearwater - Foraging	40.33	-	1.67	-	49.08	-	0.17	-
	Southern Giant Petrel - Foraging	42.83	-	0.54	-	-	-	-	-
	Southern Right Whale - Aggregation	0.5	0.96	84.17	2.96	0.46	1.00	96.63	2.25
	Southern Right Whale - Connecting Habitat	32.21	-	0.04	-	-	-	-	-
	Southern Right Whale - Known Core Range*	0.04	0.08	93.08	22.25	0.04	0.08	109.71	32.5
	Wandering Albatross - Foraging*	0.04	0.08	93.08	15.46	0.04	0.08	104.75	15.08
	Wedge-tailed Shearwater - Foraging*	0.04	0.08	93.08	22.25	0.04	0.08	109.71	32.5
	White Shark - Breeding	67.63	-	5.17	-	30.25	-	8.58	-
	White Shark - Distribution*	0.04	0.08	93.08	15.46	0.04	0.08	104.75	15.08
	White Shark - Foraging	1.54	-	84.17	-	3.88	21.5	96.63	0.21
	White-capped Albatross - Foraging	42.83	-	0.54	-	-	-	-	-
	White-faced Storm-petrel - Breeding	42.54	-	0.54	-	54.83	-	0.08	-
	White-faced Storm-petrel - Foraging	3.71	24.67	28.46	0.17	2.13	18.33	30.5	0.04
	Wilsons Storm Petrel - Migration	42.83	-	0.54	-	-	-	-	-
IBRA	Bridgewater	7.63	-	52.5	-	24.04	-	43.75	-
	East Gippsland Lowlands	-	-	-	-	48.71	-	0.33	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Flinders	26.58	-	1.17	-	27.96	-	1.54	-
	Gippsland Plain	32.08	-	17.25	-	13.29	-	28.79	-
	Glenelg Plain	6.21	-	60.29	-	22.83	-	43.75	-
	Otway Plain	1.38	5.13	92.04	18.79	1.88	4.13	94.5	7.42
	Otway Ranges	0.83	4.67	68.67	6.63	1.92	4.58	102.29	7.42
	Strzelecki Ranges	39.21	-	10.92	-	24.71	-	12.54	-
	Warrnambool Plain	0.71	1.50	90.67	21	0.71	1.25	108.17	32.42
	Wilsons Promontory	26.75	-	32.54	-	15.04	-	40.13	-
IMCRA	Batemans Shelf	48.54	-	0.17	-	54.83	-	0.08	-
	Central Bass Strait	4.46	24.79	17.33	0.13	2.33	15.75	16.67	0.04
	Central Victoria	3.67	24.58	24.88	0.21	2.13	18.25	30.5	0.04
	Flinders	26.00	-	35.79	-	14.96	-	40.13	-
	Otway*	0.04	0.08	93.08	22.25	0.04	0.08	109.71	32.5
	Twofold Shelf	27.08	-	1.67	-	27.88	-	2.54	-
	Victorian Embayments	35.00	-	10.13	-	15.33	-	12.33	-
KEF	Bonney Coast Upwelling	2.92	-	84.17	-	7.79	-	55.04	-
	Canyons on the Eastern Continental Slope	42.83	-	0.46	-	-	-	-	-
	Shelf rocky reefs	-	-	-	-	54.88	-	0.04	-
	Upwelling East of Eden	36.50	-	1.67	-	36.79	-	1	-
	West Tasmania Canyons	18.58	-	4.88	-	11.04	-	2.67	-
MNP	Bunurong	38.42	-	4.96	-	20.71	-	7.08	-
	Cape Howe	73.25	-	0.04	-	48.67	-	0.71	-
	Churchill Island	51.38	-	2.58	-	24.92	-	12.33	-
	Discovery Bay	7.83	-	6.46	-	63.29	-	5.88	-
	Point Addis	24.29	-	10.75	-	12.17	-	23.17	-
	Port Phillip Heads	33.13	-	3.63	-	14.50	-	8.58	-
	Twelve Apostles	0.58	1.83	91.33	22.25	0.46	1.29	108.33	32.5

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Wilsons Promontory	26.88	-	35.79	-	15.04	-	40.13	-
MP	Batemans	-	-	-	-	55.08	-	0.04	-
	Lower South East	37.67	-	2.38	-	96.54	-	0.08	-
MS	Mushroom Reef	39.08	-	4.5	-	20.25	-	5.38	-
NPS4	Bunurong Marine Park	39.71	-	8	-	21.79	-	9.92	-
	Wilsons Promontory Marine Park	38.79	-	18.04	-	20.79	-	33.58	-
RAMSAR	Port Phillip Bay Western Shoreline and Bellarine Peninsula	47.42	-	3.63	-	35.54	-	1.92	-
	Western Port	51.38	-	2.58	-	24.92	-	12.33	-
RSB	Bravenes Rock	2.21	11.33	56.96	0.96	1.13	13.96	89	0.63
	Cody Bank	35.17	-	4.5	-	15.42	-	2	-
	Cutter Rock	26.5	-	2.04	-	26.63	-	1.21	-
	New Zealand Star Bank	42.25	-	0.33	-	47.88	-	0.13	-
Nearshore Waters	Anser Island	36.29	-	16.63	-	15.08	-	37.42	-
	Bass Coast	39.58	-	8.5	-	21.25	-	10.04	-
	Bega Valley	-	-	-	-	49.17	-	0.33	-
	Colac Otway	1.21	5.13	92.04	18.79	1.88	4.13	94.5	7.46
	Corangamite	0.71	1.50	90.79	21	0.79	1.58	108.17	32.42
	Curtis Island	26.58	-	0.67	-	42.75	-	0.92	-
	East Gippsland	-	-	-	-	49.13	-	0.25	-
	French Island	-	-	-	-	100.25	-	0.25	-
	Gabo Island	-	-	-	-	48.83	-	0.25	-
	Glenelg	6.21	-	60.29	-	22.83	-	43.75	-
	Glennie Group	35.58	-	31.92	-	17.83	-	36.67	-
	Grant	26.38	-	0.33	-	-	-	-	-
	Greater Geelong	33.13	-	10.08	-	13.75	-	12.38	-
	Hogan Island Group	27.25	-	1.17	-	27.96	-	1.54	-
	Kanowna Island	28.92	-	16.63	-	15.04	-	37.04	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Lady Julia Percy Island	5.17	-	38.88	-	15.54	-	38.25	-
	Laurence Rocks	6.92	-	60.58	-	21.46	-	33.67	-
	Moncoeur Islands	27	-	6.96	-	25.5	-	2.67	-
	Mornington Peninsula	32.08	-	7.25	-	13.29	-	9.38	-
	Moyne	0.75	1.88	57.5	8.04	0.79	1.25	95.04	5
	Mud Island	56.38	-	0.42	-	66.33	-	0.25	-
	Norman Island	38.42	-	27.25	-	20.75	-	36.25	-
	Phillip Island	34.67	-	14.88	-	19.25	-	20.42	-
	Rodondo Island	26.75	-	12.04	-	24.46	-	8.08	-
	Seal Islands	-	-	-	-	62.04	-	0.04	-
	Shellback Island	38.67	-	14.75	-	20.38	-	14.63	-
	Skull Rock	28.92	-	16.46	-	15.04	-	36.71	-
	South Gippsland	36.38	-	32.54	-	19.04	-	40.13	-
	Surf Coast	24.33	-	10.79	-	9.38	-	17.17	-
	Warrnambool	3.13	6.00	37.46	1.67	4.33	20.83	85.5	1.33
State Waters	New South Wales	-	-	-	-	48.79	-	0.25	-
	South Australia State Waters	25.38	-	2.46	-	96.42	-	0.17	-
	Tasmania State Waters	26.50	-	2.79	-	27.46	-	2.67	-
	Victoria State Waters	0.21	0.42	93.04	22.25	0.21	0.42	109.71	32.5
Nearshore Waters (Sub-LGA)	Anglesea	28.67	-	10.29	-	12.67	-	15.13	-
	Apollo Bay	3.25	31.71	33.71	0.71	2.00	34.04	22.71	0.04
	Bay of Islands	0.75	1.88	57.5	8.04	0.79	1.29	59.58	5
	Bega Valley	-	-	-	-	49.17	-	0.33	-
	Cape Howe / Mallacoota	-	-	-	-	49.13	-	0.25	-
	Cape Liptrap - Northwest	39.04	-	10.42	-	24.75	-	13.46	-
	Cape Nelson	6.21	-	60.29	-	22.83	-	43.75	-
	Cape Otway West	1.21	5.17	92.04	20.29	1.88	5.25	94.5	7.42
	Cape Patton	16.42	-	22.13	-	4.54	-	19.08	-

Receptor		Summer				Winter			
		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High	Low	High
	Childers Cove	3.00	5.67	38.21	2.75	0.83	3.83	38.63	1.79
	Discovery Bay - East	10.58	-	7.21	-	64.21	-	4.71	-
	Discovery Bay - West	21.75	-	2.88	-	69.42	-	5.54	-
	French Island / Crib Point	-	-	-	-	104.96	-	0.13	-
	French Island / San Remo	44.25	-	1.25	-	24.21	-	10.04	-
	Kilcunda	40.13	-	8.5	-	21.71	-	9.96	-
	Lorne	24.17	-	19.58	-	9.38	-	10.67	-
	Moonlight Head	0.79	2.92	82	21.67	0.88	1.58	108.17	32.42
	Mornington Peninsula - South	32.33	-	6.58	-	13.50	-	7.96	-
	Mornington Peninsula - Southwest	32.04	-	7.25	-	13.29	-	9.29	-
	Port Campbell	0.75	1.50	90.79	14.54	0.79	1.83	87	13.17
	Port Fairy	7.46	-	50.38	-	11.29	36.92	56.13	0.08
	Port Phillip - Queenscliff	33.13	-	10.08	-	14.58	-	12.38	-
	Port Phillip - Sorrento Shore	32.63	-	7.21	-	14.33	-	8.63	-
	Port Phillip Heads	41.04	-	3.29	-	15.33	-	3.71	-
	Portland Bay - East	8.50	-	38.58	-	22.96	-	51.75	-
	Portland Bay - West	16.46	-	53.33	-	30.79	-	40.5	-
	Torquay	29.50	-	9.88	-	12.79	-	17.17	-
	Venus Bay	39.58	-	8.5	-	21.25	-	9.92	-
	Waratah Bay	39.21	-	10.92	-	24.71	-	12.54	-
	Warrnambool	3.71	13.88	30.75	0.04	8.58	33.96	95.04	1.13
	Westernport	40.13	-	5.38	-	27.38	-	5.33	-
	Wilsons Promontory - East	47.04	-	15	-	25.50	-	31.71	-
	Wilsons Promontory - West	36.38	-	32.54	-	19.04	-	40.13	-

*The release location resides within the receptor boundaries.

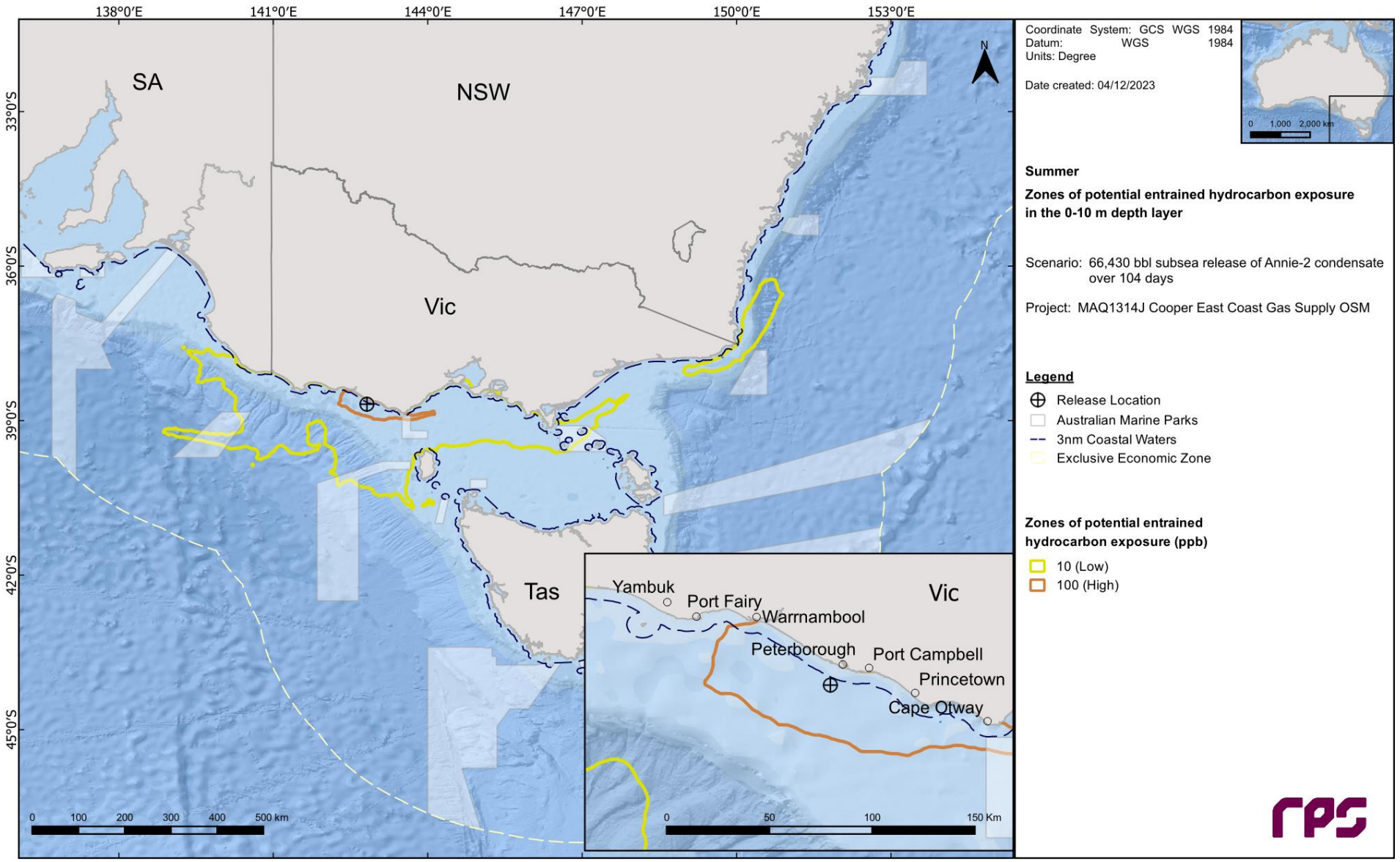

Figure 13.13 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

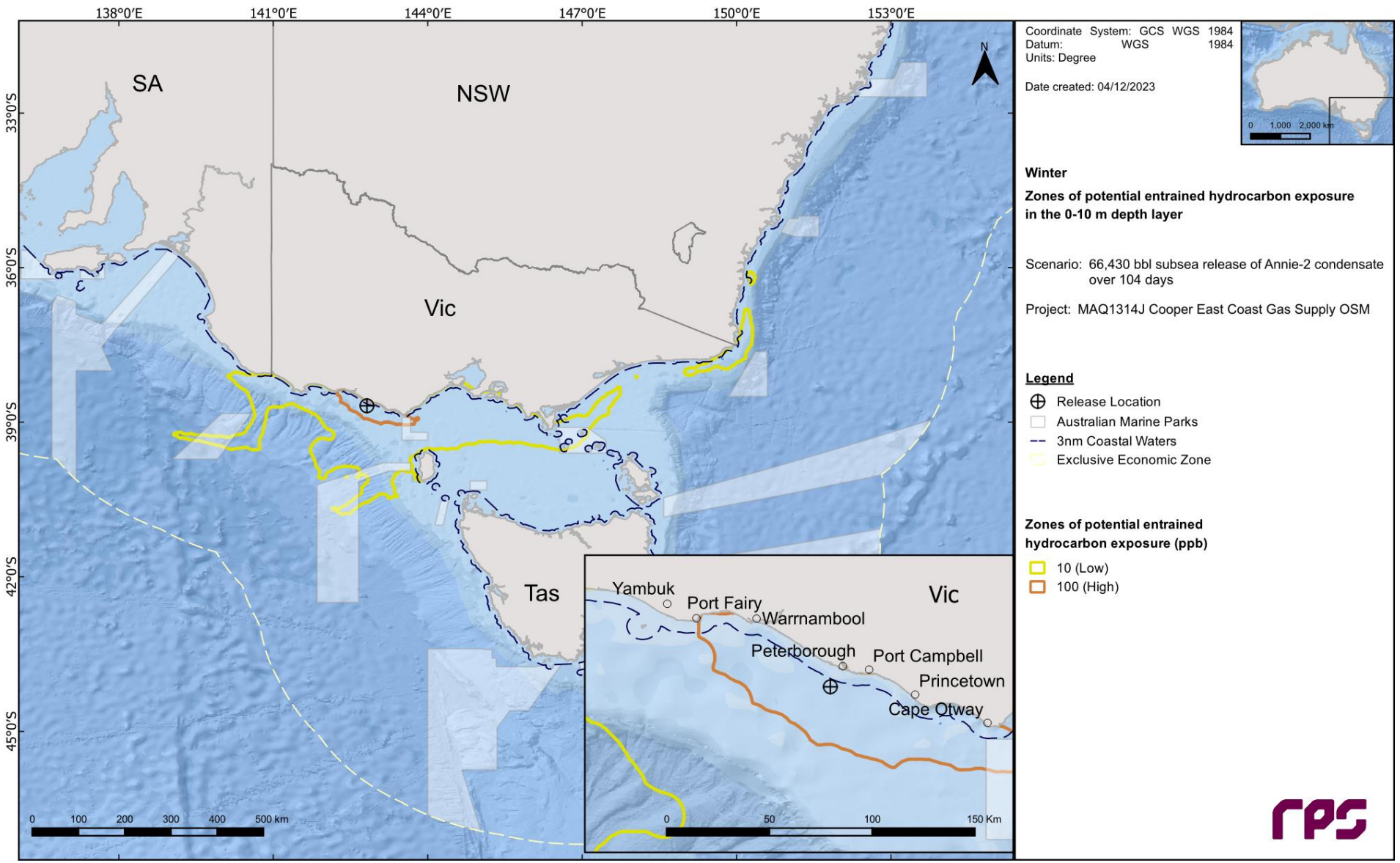

Figure 13.14 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

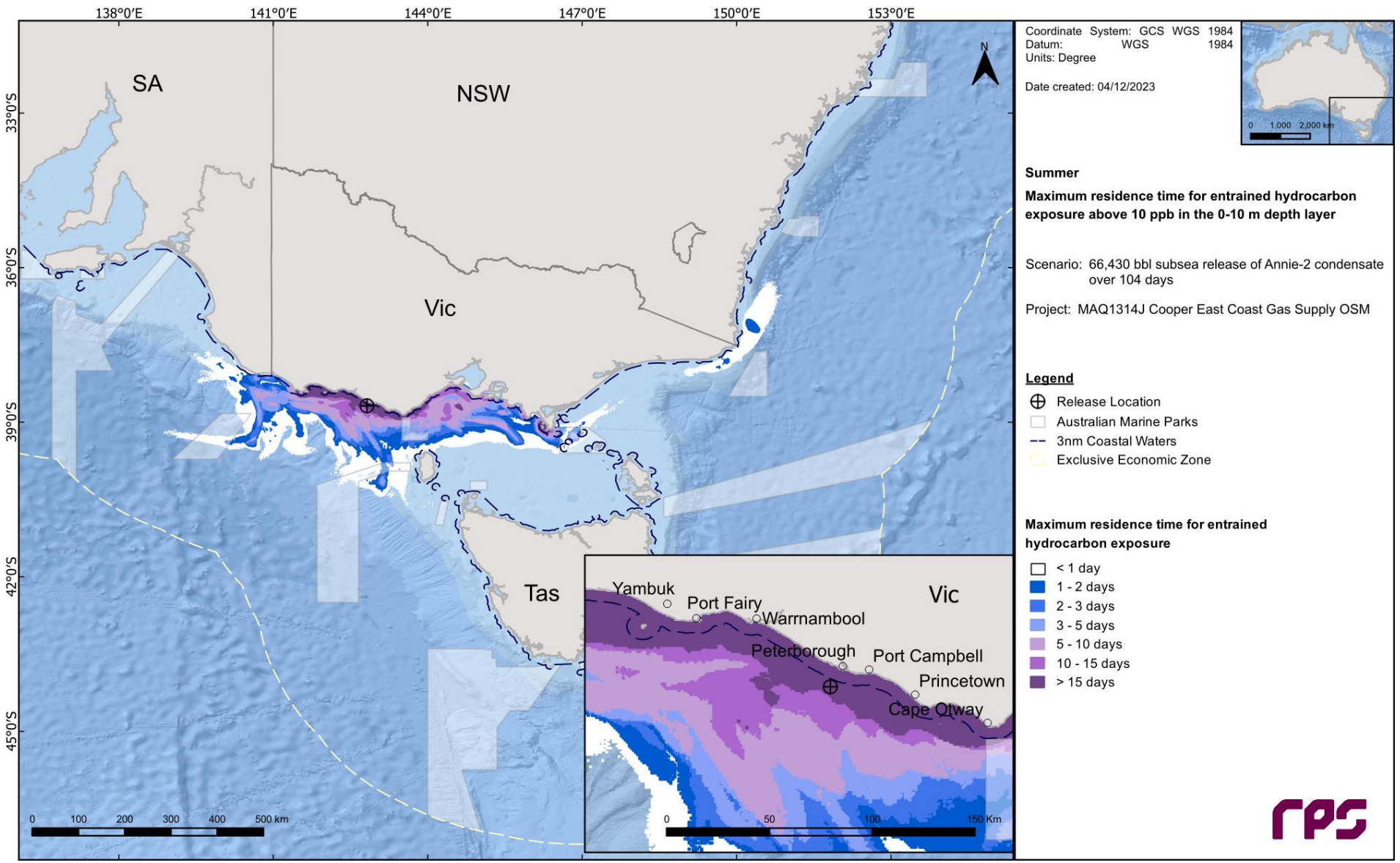

Figure 13.15 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

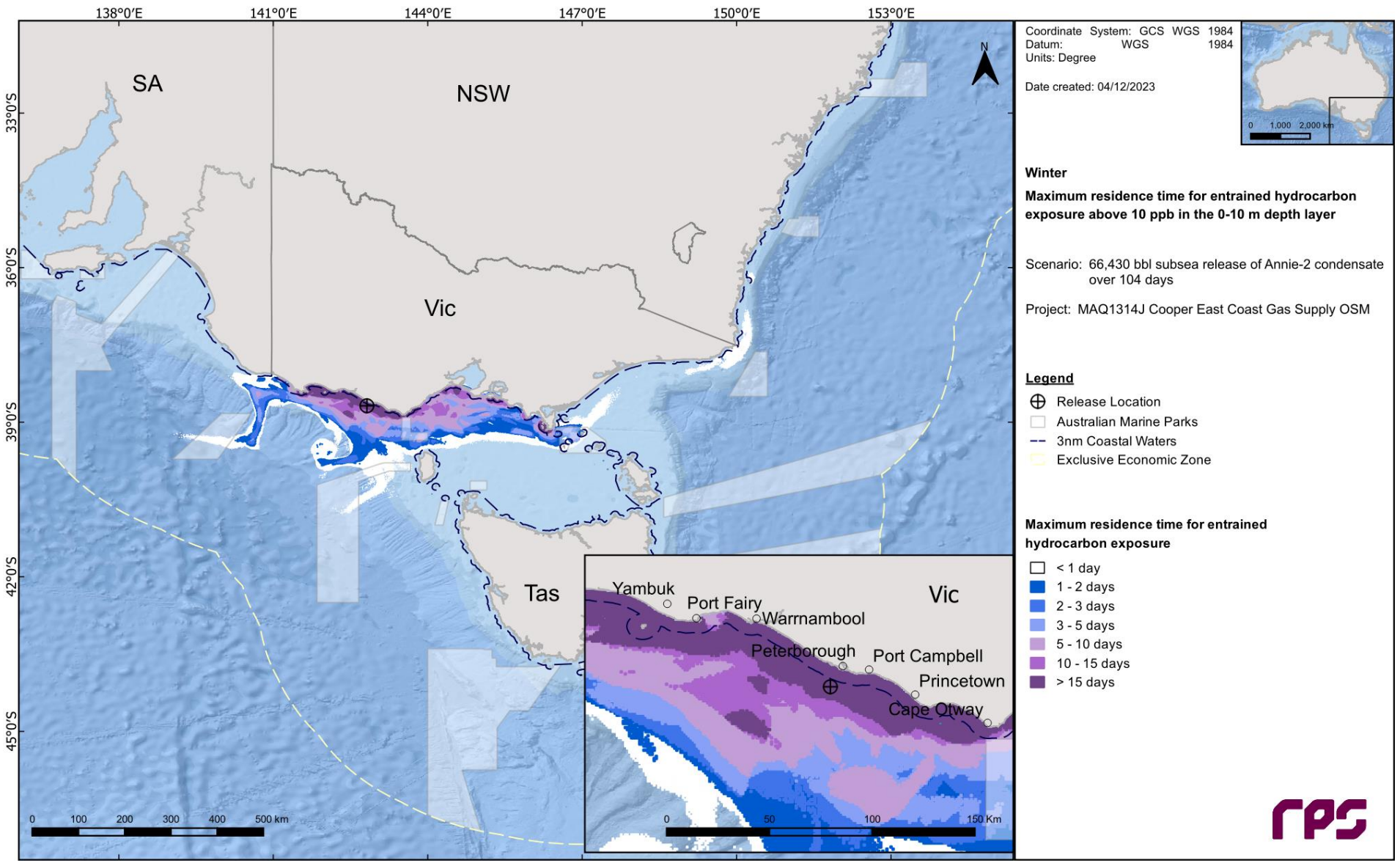

Figure 13.16 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea in the event of a 66,430 bbl subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

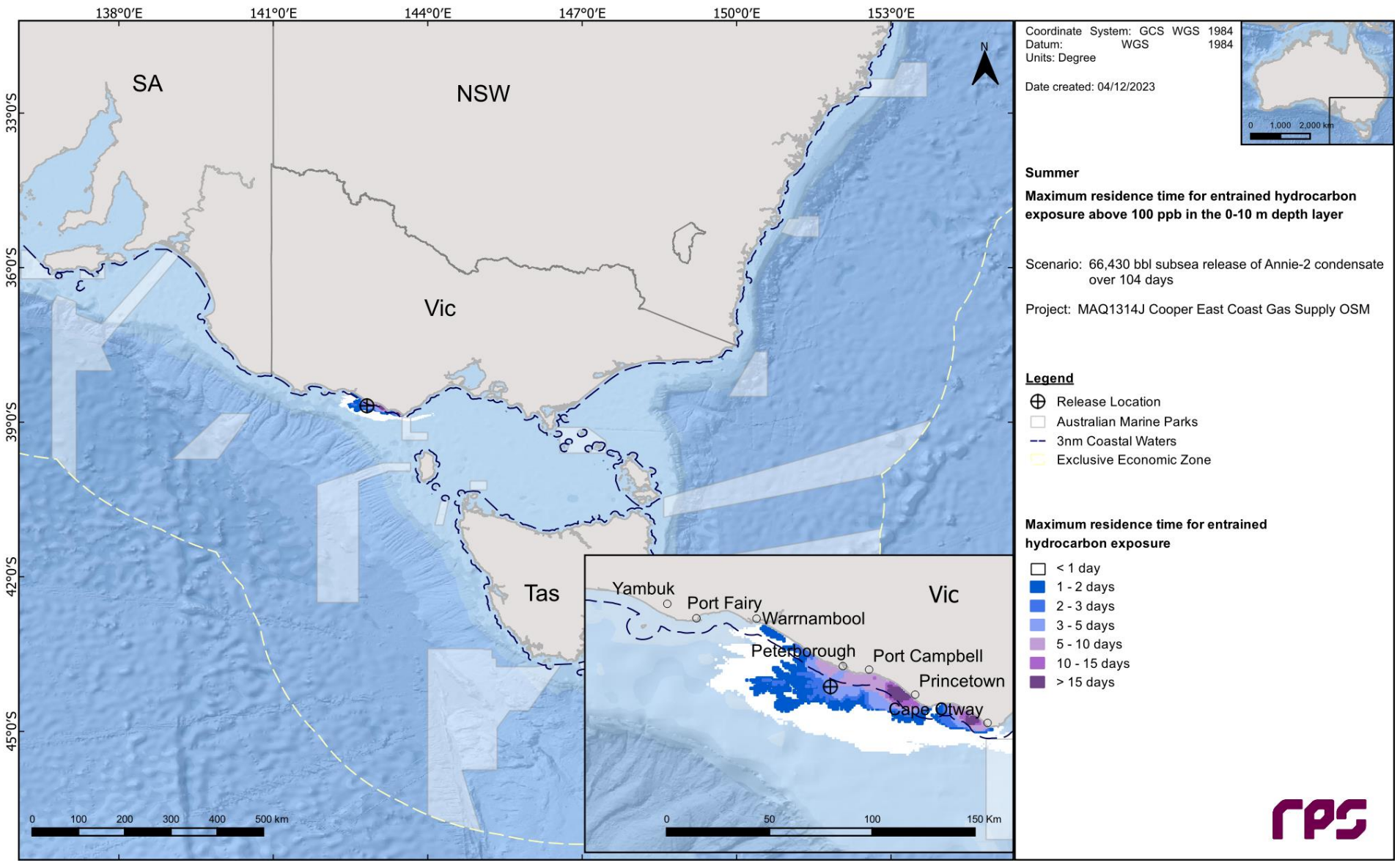

Figure 13.17 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea in the event of a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during summer conditions.

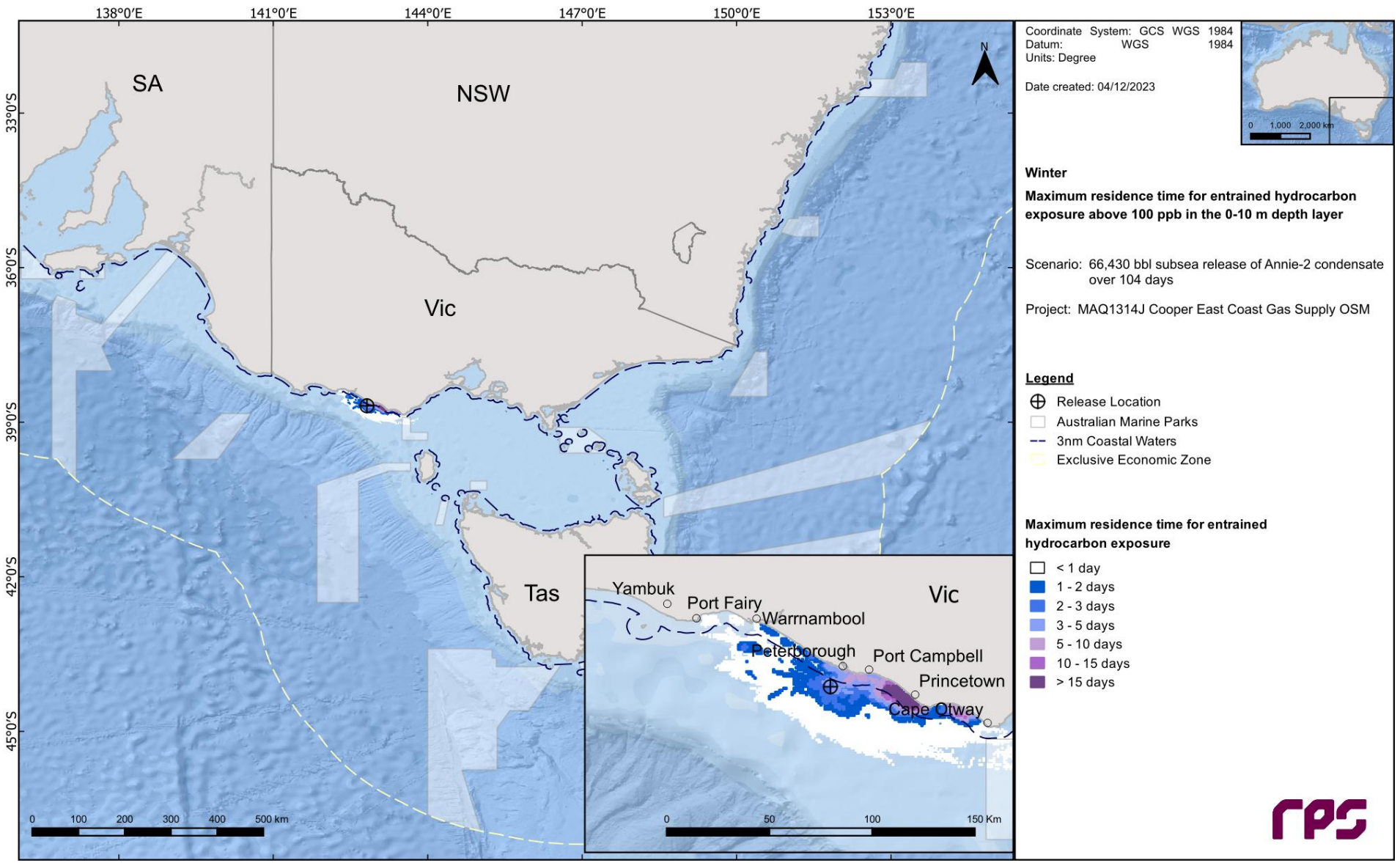

Figure 13.18 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea in the event of a 66,430 bbl (10,562 m^3) subsurface release from a loss of well control at Annie-2 over 104 days. The results were calculated from 100 spill simulations during winter conditions.

13.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below for the following criteria:

a. Largest swept area for surface oil above 10 g/m^2;
b. Largest (total) volume of oil ashore;
c. Longest length of shoreline with oil accumulation above 100 g/m^2; and
d. Largest area of entrained hydrocarbon exposure above 100 ppb.
e. Largest area of dissolved hydrocarbon exposure above 50 ppb.

Note, no dissolved hydrocarbon concentrations above 50 ppb were predicted for this scenario.

Table 13.11 presents a summary of in-water exposure and shoreline accumulation at the assessed thresholds for the identified deterministic simulations.

Table 13.11 Summary of the worst-case deterministic analysis based on the scenario presented in the stochastic analysis section.

Variable	Threshold	Deterministic Analysis Criteria				
		Largest swept area of floating oil >10 g/m²	Largest volume of oil ashore	Longest length of shoreline with accumulation >100 g/m²	Largest area of entrained hydrocarbon exposure >100 ppb	Largest area of dissolved hydrocarbon exposure >50 ppb
Season		Winter	Winter	Winter	Winter	-
Run Number		61	88	88	77	-
Total area of floating Oil exposure (km²)	1 g/m²	291.7	190.4	190.4	251.6	-
	10 g/m²	**4.9**	0.8	0.8	0.8	-
	50 g/m²	-	-	-	-	-
Total length of shoreline accumulation (km)	10 g/m²	175	149	149	114	-
	100 g/m²	25	56	**56**	40	-
	1,000 g/m²	-	3	3	1	-
Minimum time before accumulation on any shoreline (hours)	10 g/m²	272	101	101	102	-
	100 g/m²	380	389	389	284	-
	1,000 g/m²	-	2,020	2,020	2,100	-
Total volume of oil ashore (m³)		125	**263**	263	154	-
Total area of entrained hydrocarbon exposure (km²)	10 ppb	28,379	17,526	17,526	17,586	-
	100 ppb	1,449	1,581	1,581	**2,295**	-
Total area of dissolved hydrocarbon exposure (km²)	10 ppb	11	29	29	20	-
	50 ppb	-	-	-	-	-
	400 ppb	-	-	-	-	-
Start Date		28th May 2011	3rd July 2010	3rd July 2010	14th May 2013	-

NC = No contact at, or above the specified shoreline accumulation threshold.

13.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m^2 was identified during winter as run number 61, which started on 28th May 2011.

Figure 13.19 illustrates the floating oil exposure and shoreline accumulation over the 118-day simulation.

Figure 13.20 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 118-day simulation.

Figure 13.21 presents the fates and weathering graph for the corresponding single spill trajectory and Table 13.12 summarises the mass balance peaks and at the end of the simulation.

Table 13.12 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 10 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m^3)	194.4	3.8	0.0
Entrained (m^3)	1451.7	95.2	1131.7
Dissolved (m^3)	4.5	14.5	0.2
Evaporation (m^3)	5695.9	118.0	5695.9
Decay (m^3)	2402.3	118.0	2402.3
Ashore (m^3)	126.3	113.4	125.1

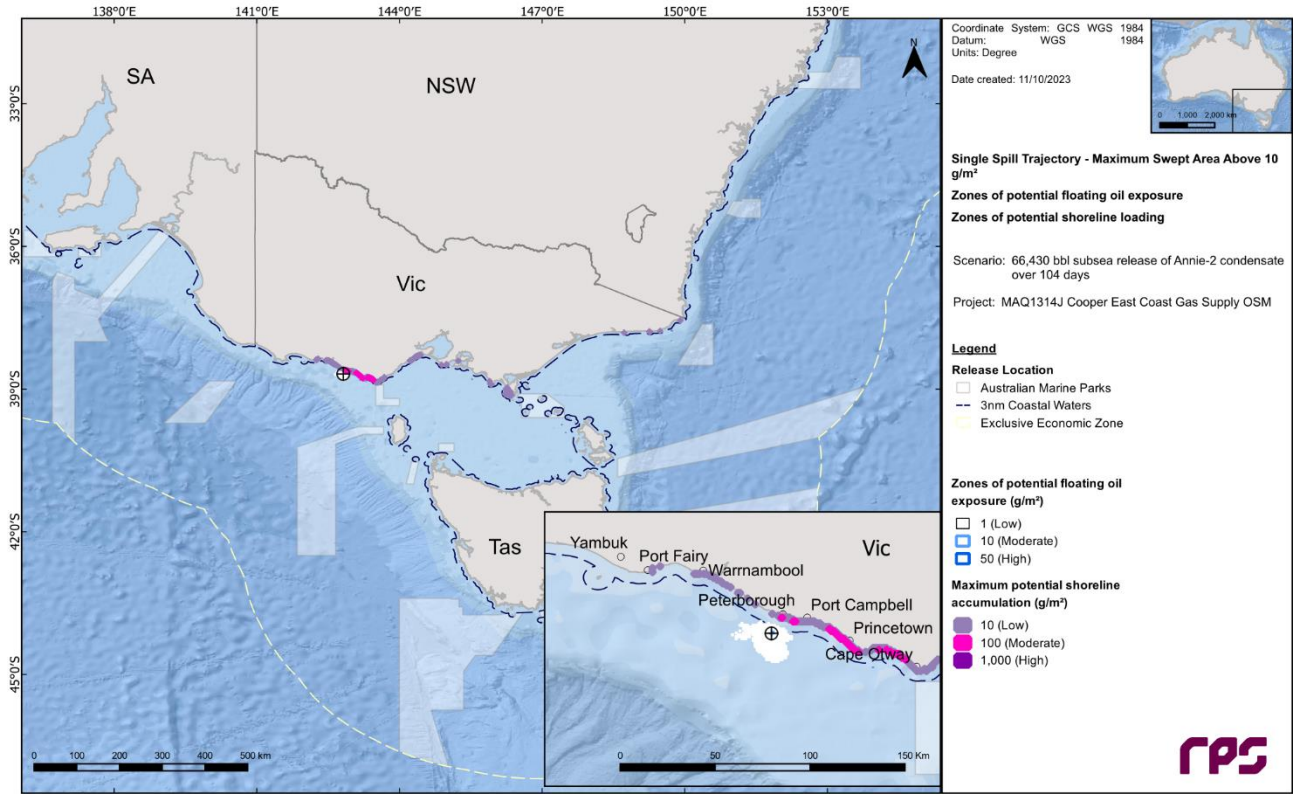

Figure 13.19 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 10 g/m^2.

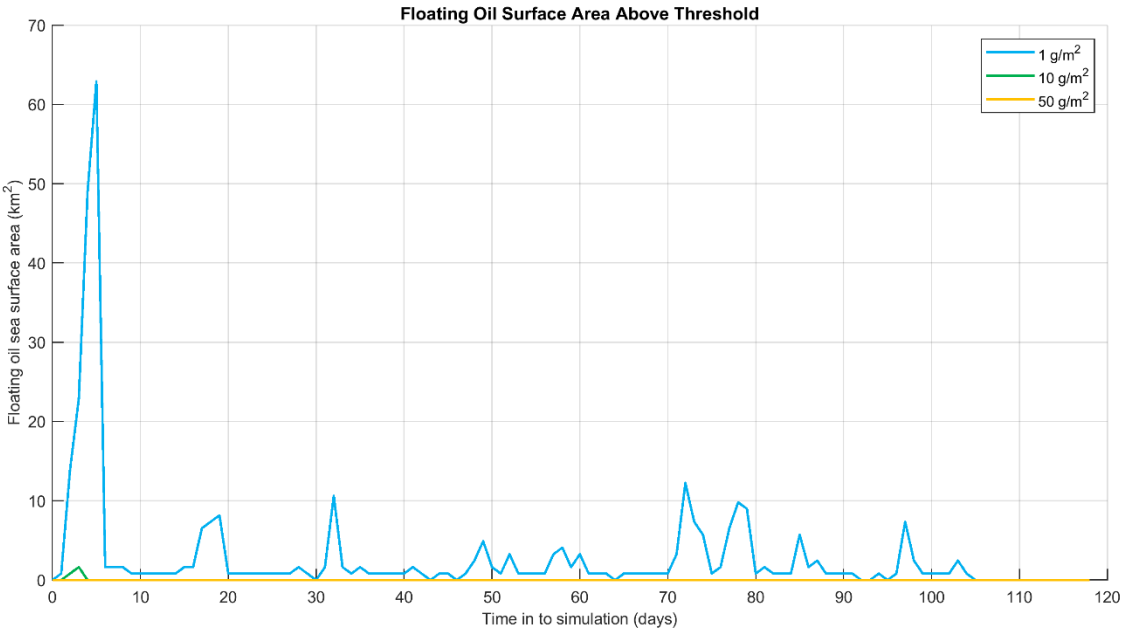

Figure 13.20 Time series of the sea surface exposure above each threshold for the trajectory with the largest swept area of floating oil above 10 g/m^2.

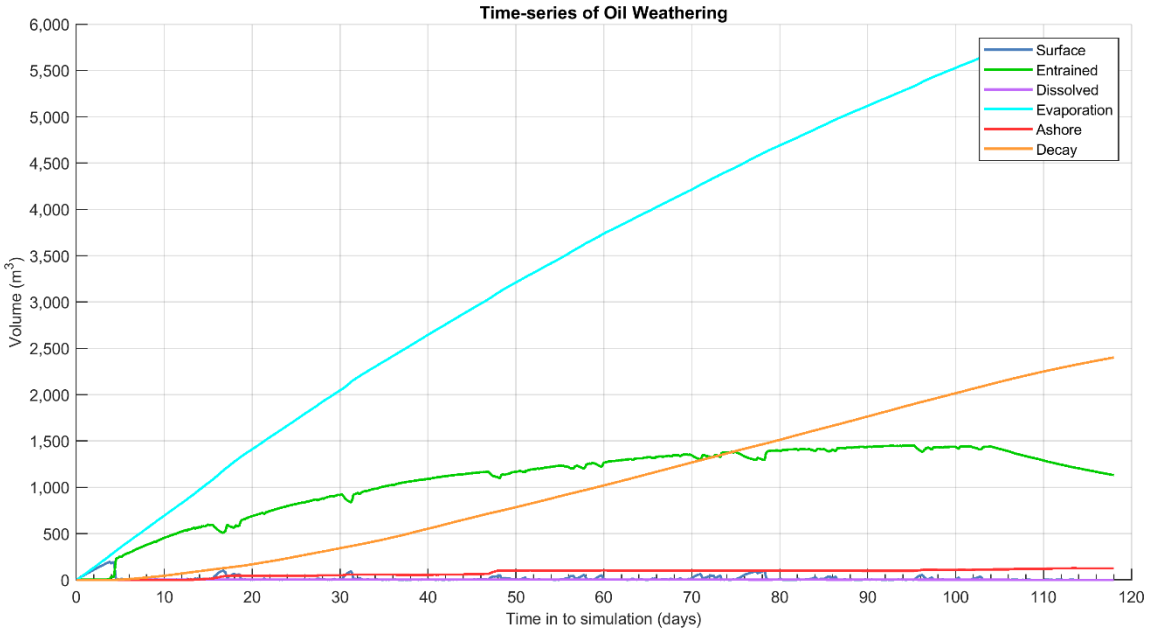

Figure 13.21 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m^2.

13.2.2 Deterministic Case: Largest volume of oil ashore and longest length of shoreline with accumulation above 100 g/m^2

The deterministic trajectory that resulted in the largest volume of oil ashore and the longest length of shoreline with accumulation above 100 g/m^2 was identified during winter as run number 88, which started on 3rd July 2010.

Figure 13.22 illustrates the floating oil exposure and shoreline accumulation over the 118-day simulation.

Figure 13.23 displays the time series of the volume of oil accumulating on shorelines at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds over the 118-day simulation.

Figure 13.24 presents the fates and weathering graph for the corresponding single spill trajectory and Table 13.13summarises the mass balance peaks and at the end of the simulation.

Table 13.13 Summary of the mass balance for the trajectory with the largest volume ashore and the longest length of shoreline with accumulation above 100 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m^3)	137.4	5.2	0.3
Entrained (m^3)	1363.9	96.2	1057.9
Dissolved (m^3)	4.8	28.3	0.4
Evaporation (m^3)	5695.2	118.0	5695.2
Decay (m^3)	2338.5	118.0	2338.5
Ashore (m^3)	264.9	113.0	263.0

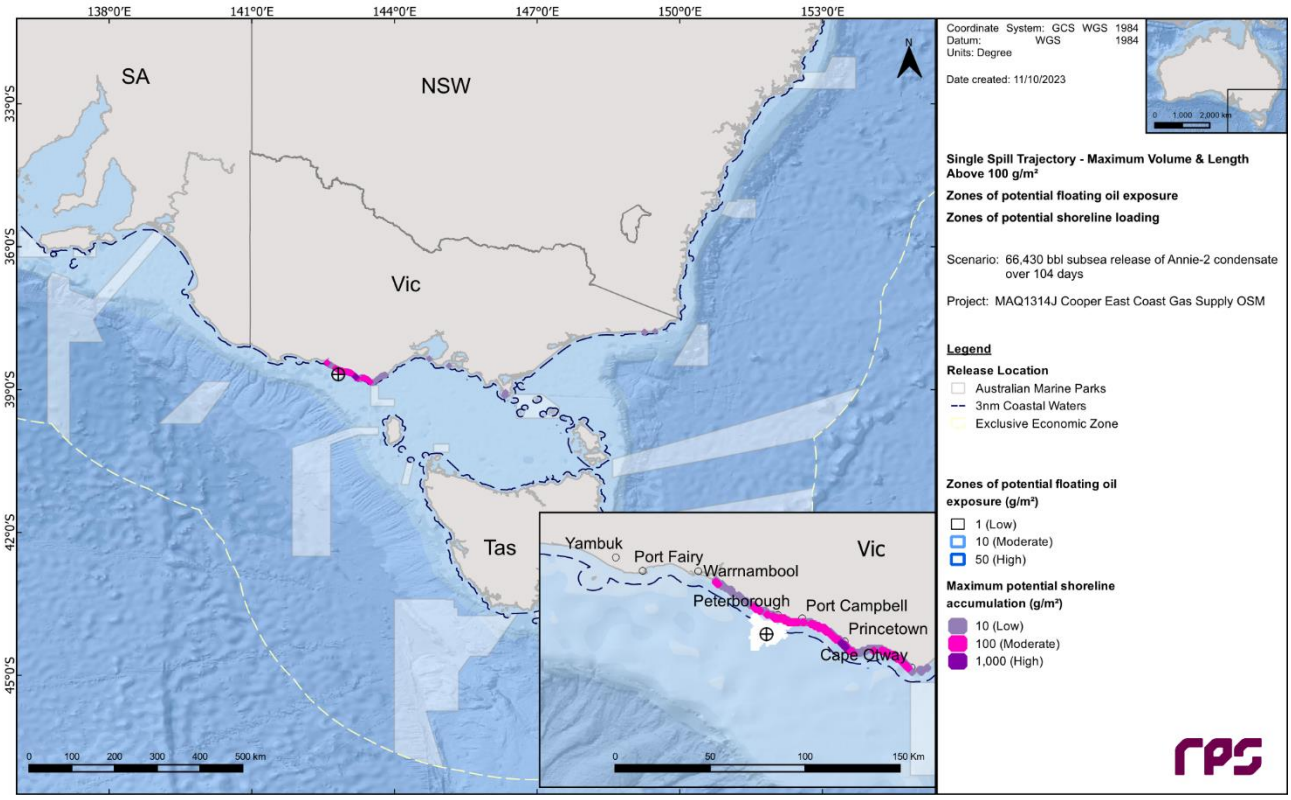

Figure 13.22 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume ashore and the longest length of shoreline with accumulation above 100 g/m^2.

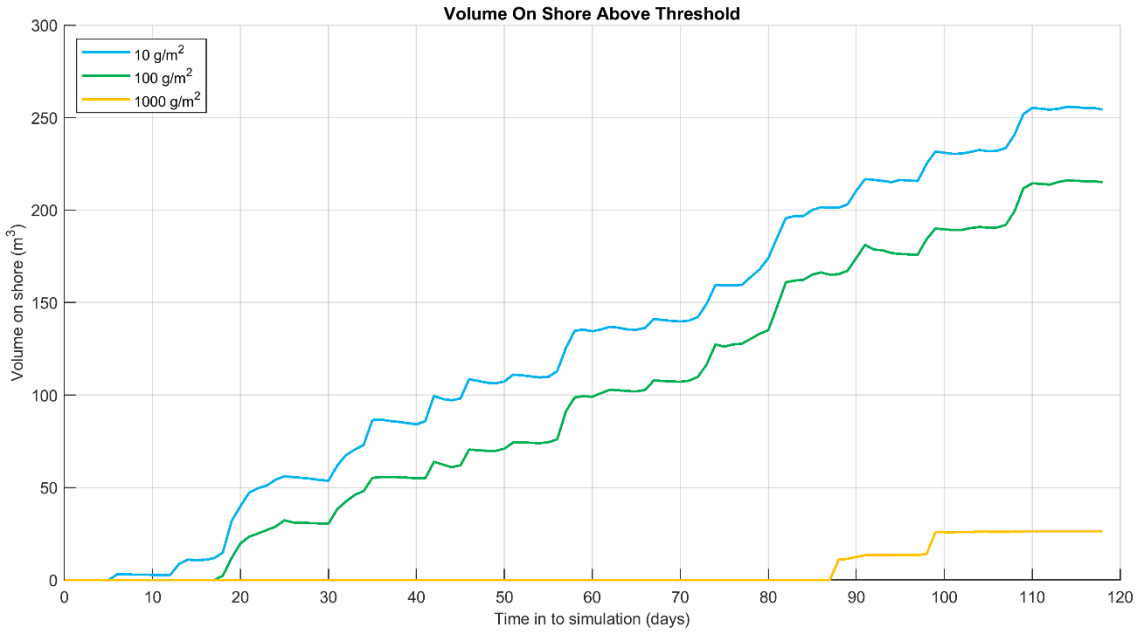

Figure 13.23 Time series of oil accumulation on the shoreline above each threshold for the trajectory with the largest volume ashore and the longest length of shoreline with accumulation above 100 g/m^2.

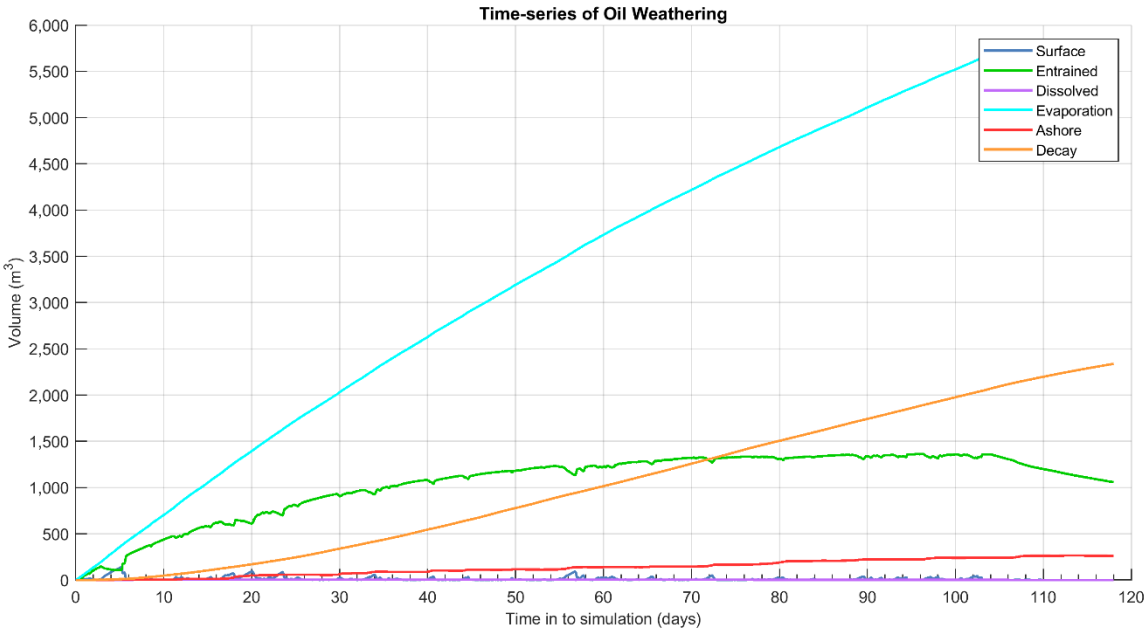

Figure 13.24 Predicted weathering and fates graph for the trajectory with the largest volume ashore and the longest length of shoreline with accumulation above 100 g/m^2.

13.2.3 Deterministic Case: Largest area of entrained hydrocarbon exposure above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbon exposure above 100 ppb was identified during winter as run number 77, which started on 14th May 2014.

Figure 13.25 illustrates the zones of potential entrained hydrocarbon exposure over the 118-day simulation.

Figure 13.26 displays the time series of the area of entrained hydrocarbon exposure at the low (10 ppb) and high (100 ppb) thresholds over the 118-day simulation.

Figure 13.27 presents the fates and weathering graph for the corresponding single spill trajectory and Table 13.14 summarises the mass balance peaks and at the end of the simulation.

Table 13.14 Summary of the mass balance for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m^3)	169.6	21.9	0.1
Entrained (m^3)	1417.1	102.2	1120.2
Dissolved (m^3)	5.2	17.9	0.4
Evaporation (m^3)	5736.8	118.0	5736.8
Decay (m^3)	2344.2	118.0	2344.2
Ashore (m^3)	154.9	111.7	153.5

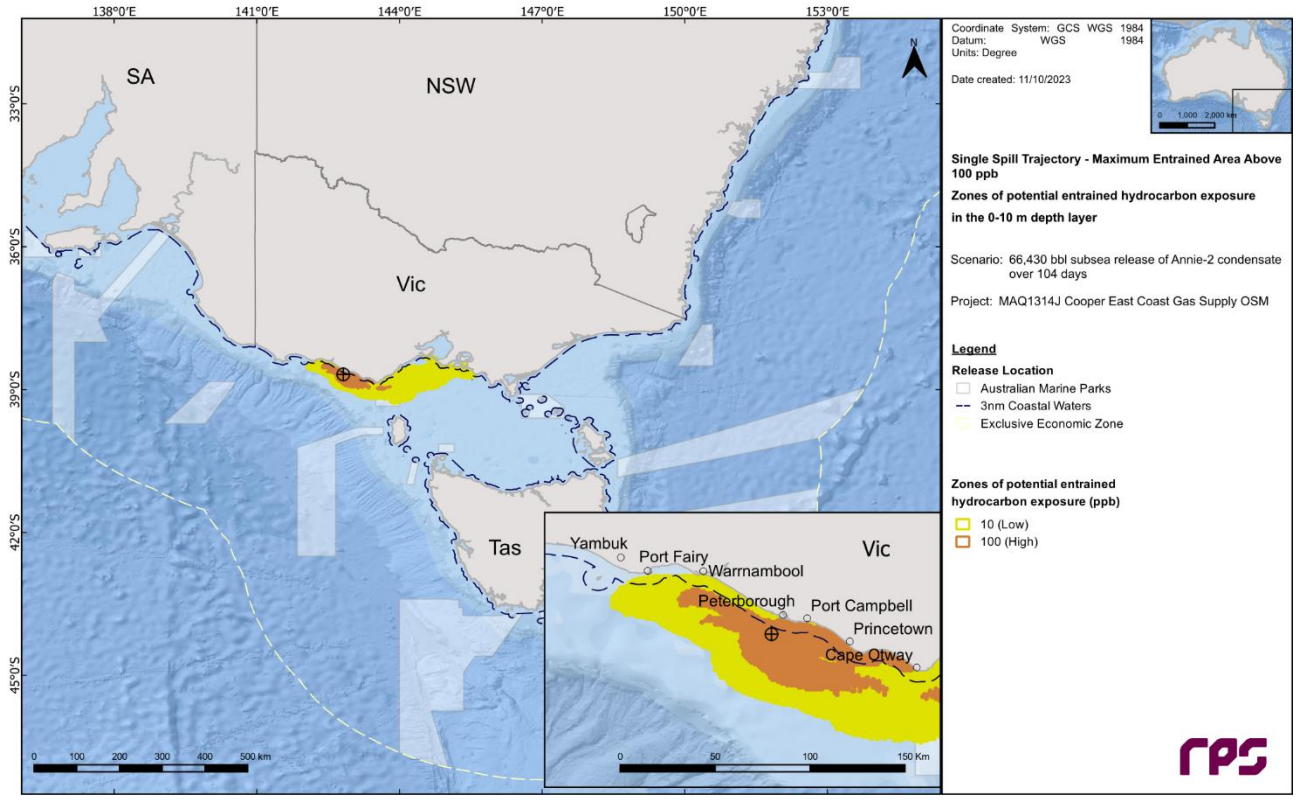

Figure 13.25 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

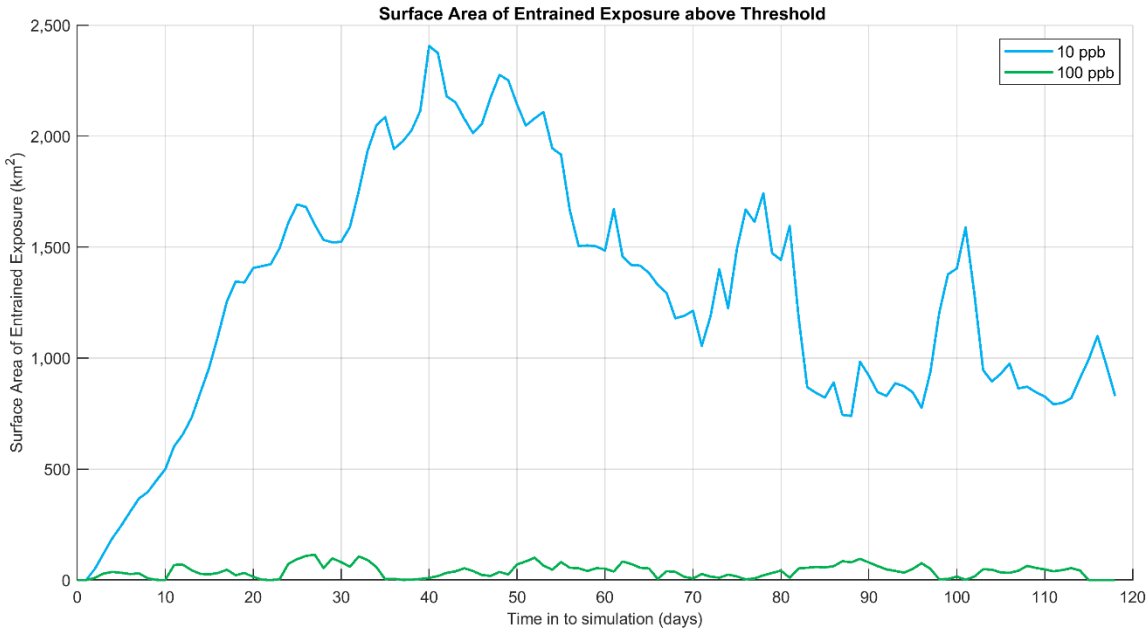

Figure 13.26 Time series of the entrained hydrocarbon exposure area above each threshold for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

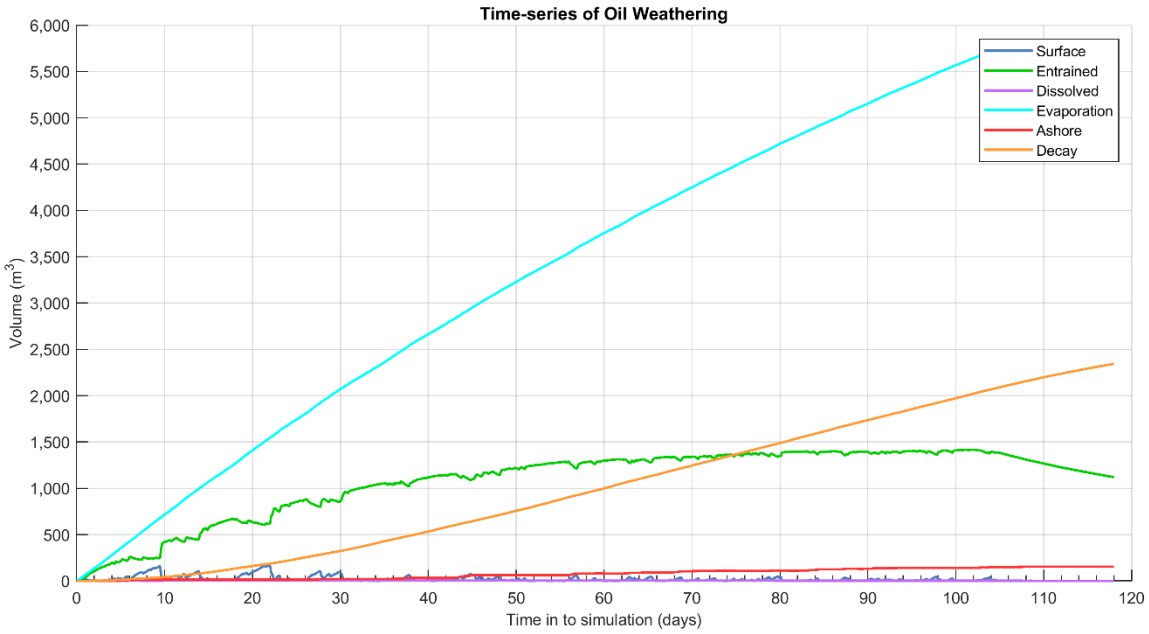

Figure 13.27 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

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ANNIE-2 – VESSEL COLLISION

Oil Spill Modelling

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TERMS AND ABBREVIATIONS

AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ANZECC	Australian and New Zealand Environment and Conservation Council
API	American Petroleum Institute gravity. A measure of how heavy or light a petroleum liquid is compared to water.
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ASTM	American Society for Testing and Materials
BIA	Biologically Important Area
Bonn Agreement	An agreement for cooperation in dealing with pollution of the North Sea by oil and other harmful substances, 1983, includes: Governments of the Kingdom of Belgium, the Kingdom of Denmark, the French Republic, the Federal Republic of Germany, the Republic of Ireland, the Kingdom of the Netherlands, the Kingdom of Norway, the Kingdom of Sweden, the United Kingdom of Great Britain and Northern Ireland and the European Union.
BP	Boiling point. The temperature at which the vapor pressure of the liquid is equal to the pressure exerted on it by the surrounding atmosphere
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CFSR	Climate Forecast System Reanalysis
Decay	The process where oil components are changed either chemically or biologically (biodegradation) to another compound. It includes breakdown to simpler organic carbon compounds by bacteria and other organisms, photo-oxidation by solar energy, and other chemical reactions.
Deterministic oil spill modelling	Oil spill modelling involving a computer simulation of a single hypothetical oil spill event subject to a single sequence of wind, current and other sea conditions over time. Single oil spill modelling, also referred to as "deterministic modelling" provides a simulation of one possible outcome of a given spill scenario, subject to the metocean conditions that are imposed. Single oil spill modelling is commonly used to consider the fate and effects of 'worst-case' oil spill scenarios that are carefully selected in consideration of the nature and scale of the offshore petroleum activity and the local environment (NOPSEMA, 2017). Because the outcomes of a single oil spill simulation can only represent the outcome of that scenario under one sequence of metocean conditions, worst-case conditions are often identified from stochastic modelling. It is impossible to calculate the likelihood of any outcome from a single oil spill simulation. Single oil spill modelling is generally used for response planning, preparedness planning and for supporting oil spill response operations in the event of an actual spill
Dynamic viscosity	The dynamic viscosity of a fluid expresses its resistance to shearing flows, where adjacent layers move parallel to each other with different speeds.
Floating oil exposure	Contact by floating oil on the sea surface at concentrations equal to or exceeding defined threshold concentrations. The consequence will vary depending on the threshold and the receptors
GODAE	Global Ocean Data Assimilation Experiment
HYCOM	Hybrid Coordinate Ocean Model. A data-assimilative, three-dimensional ocean model
HYDROMAP	Advanced ocean/coastal tidal model used to predict tidal water levels, current speed and current direction.
IMCRA	Integrated marine and coastal regionalisation areas
IOA	Index of Agreement
ITOPF	International Tanker Owners Pollution Federation Limited
KEF	Key Ecological Feature
LGA	Local Government Areas
MAE	Mean Absolute Error
MAHs	Monoaromatic Hydrocarbons
MDO	Marine diesel oil
MNP	Marine National Park
MP	Marine Park

MS	Marine Sanctuary
NASA	National Aeronautics and Space Administration (USA)
NCEP	National Centres for Environmental Prediction (USA)
NOAA	National Oceanic and Atmospheric Administration (USA)
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NP	National Park
NR	Nature Reserve
PAH	Polynuclear Aromatic Hydrocarbons
Pour Point	The pour point of a liquid is the temperature below which the liquid loses its flow characteristics
ppb	Parts per billion (concentration)
psu	Practical salinity units
Ramsar site	A site listed under the Ramsar Convention on wetlands which is an international intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.
RSB	Reefs, Shoals and Banks
Shoreline accumulation	Arrival of oil at or near shorelines at on-water concentrations equal to or exceeding defined threshold concentrations. Shoreline contact is judged for floating oil arriving within a 2 km buffer zone from any shoreline as a conservative measure
SIMAP	Spill Impact Model Application Package. SIMAP is designed to simulate the fate and effects of spilled hydrocarbons for surface or subsea releases
SRTM	Shuttle Radar Topography Mission
State Waters	Low water mark seaward for three nautical miles
STB	Standard Barrel
Stochastic oil spill modelling	Stochastic oil spill modelling is created by overlaying and statistically analysing the outcomes of many single oil-spill simulations of a defined spill scenario, where each simulation was subject to a different sequence of metocean conditions, selected objectively (typically by random selection) from a long sequence of historic conditions for the study area. Analysis of this larger set of simulations provides a more accurate indication of the area of hydrocarbon exposure and indicates which locations are more likely to be exposed (as well as other statistics). Stochastic oil spill modelling avoids biases that affect single oil spill modelling (due to the reliance on only one possible sequence of conditions). However, when interpreting stochastic modelling, which is based on a wide range of potential conditions that might happen to occur, it is essential to understand that calculations will encompass a much larger area than could be exposed in any single spill event, where a more limited set of conditions will occur. Consequently, it is misleading to imply that the region derived from stochastic modelling indicate the outcomes expected from a single spill event (NOPSEMA, 2017) Stochastic modelling is generally used for risk assessment and preparedness planning by indicating locations that could be exposed and may require response or subsequent impact assessment
Sub-LGA	Sub-Local Government Areas
TOPEX/Poseidon	A joint satellite mission between NASA and CNES to map ocean surface topography using an array of satellites equipped with detailed altimeters
US EPA	United States Environmental Protection Agency
US CG	United States Coast Guard
World Ocean Atlas	A collection of physicochemical parameters (e.g. temperature, salinity, oxygen, phosphate, silicate, and nitrate) based on profile data from the World Ocean Database (NCEI, 2021) established by NOAA's National Centers for Environmental Information (NCEI)
WGS 1984	World Geodetic System 1984 (WGS84); reference coordinate system

EXECUTIVE SUMMARY

Background

Cooper Energy (Cooper) plans to drill and operate the Annie-2 well in the Otway Basin (Figure 1.1).

In order to inform the offshore environmental impact and risk assessments Cooper commissioned RPS to conduct a detailed oil spill modelling study assessing a 250 m^3 surface release of marine diesel oil over 6 hours following a vessel collision.

The modelling assessment was undertaken on an annual basis.

The purpose of the modelling is to provide an understanding of a conservative 'outer envelope' of the potential area of exposure in the unlikely event of hydrocarbon spill. The modelling does not take into consideration any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill. Therefore, the modelling results represent the maximum extent of hydrocarbon exposure.

The spill modelling was performed using an advanced three-dimensional trajectory and fates model; Spill Impact Model Application Program (SIMAP). The SIMAP model calculates the transport, spreading, entrainment and evaporation of spilled hydrocarbons over time, based on the prevailing wind and current conditions and the physical and chemical properties.

Methodology

The modelling study was carried out in several stages. Firstly, a ten-year wind and current dataset (2010–2019) was generated and the currents included the combined influence of three-dimensional large-scale ocean currents and tidal currents. Secondly, the currents, winds and detailed hydrocarbon characteristics were used as inputs in the three-dimensional oil spill model (SIMAP) to simulate the drift, spread, weathering and fate of the spilled oil.

As spills can occur during any set of wind and current conditions, modelling was conducted using a stochastic (random or non-deterministic) approach, which involved running 100 randomly selected single trajectory simulations per scenario, with each simulation having the same spill information (location, spill volume, duration and composition of hydrocarbons) but varying start times. This ensured that each spill simulation was subject to a unique set of wind and current conditions

The SIMAP system, the methods and analysis presented herein, use modelling algorithms which have been anonymously peer reviewed and published in international journals. Further, RPS warrants that this work meets and exceeds the ASTM Standard F2067-13 "*Standard Practice for Development and Use of Oil Spill Models*".

Oil Properties

The marine diesel oil (MDO) used for the scenario has an API of 24 and a density of 890 kg/m^3 (at 25 ºC) with a viscosity value (14.0 cP at 25 ºC) classifying it as a Group II (light-persistent) oil according to the International Tankers Owners Pollution Federation (ITOPF, 2014) and US EPA/USCG classifications.

The MDO is a mixture of volatile and persistent hydrocarbons with high proportions of semi- and low-volatile components. In favourable evaporation conditions, about 4.0% of the oil mass should evaporate within the first 12 hours (BP < 180°C), a further 32% should evaporate within the first 24 hours (180°C < BP < 265°C) and a further 54% should evaporate over several days (265°C < BP < 380°C). Approximately 10% of the oil is shown to be persistent.

Results

Scenario: 250 m³ loss of containment from a vessel collision

- The maximum distance from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (> 50 g/m^2) floating oil exposure zones was 32.5 km (west), 10.3 km (west) and 2.8 km (east-southeast), respectively.
- The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 60%. The minimum time before oil accumulation at, or above, the low threshold was 22 hours whilst the maximum total volume ashore for a single spill trajectory was 43.2 m^3, and the maximum length of shoreline with accumulation above the low, moderate and high thresholds were 32 km, 11 km and 1 km, respectively.
- Excluding the 13 BIAs that the release location resides within, the highest probability of low dissolved hydrocarbon exposure ranged between 1% (Short-tailed Shearwater - Foraging) and 2% (Southern Right Whale - Aggregation).
- The highest probability of low entrained hydrocarbon exposure was recorded for the Twelve Apostles MNP (65%) and Short-tailed Shearwater – Foraging BIA (64%). Additional receptors including LGAs, sub-LGAs, and AMPs were predicted with entrained hydrocarbon exposure.

1 INTRODUCTION

1.1 Background

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Note that the oil spill model, the method and analysis presented herein uses modelling algorithms which have been anonymously peer reviewed and published in international journals. Furthermore, RPS warrants that this work meets and exceeds the American Society for Testing and Materials (ASTM) Standard F2067-13 "*Standard Practice for Development and Use of Oil Spill Models*".

Table 1-1 Coordinates of the release location.

Infrastructure	Latitude	Longitude	Water Depth (m)
Annie-2	38.68375° S	142.82456° E	36

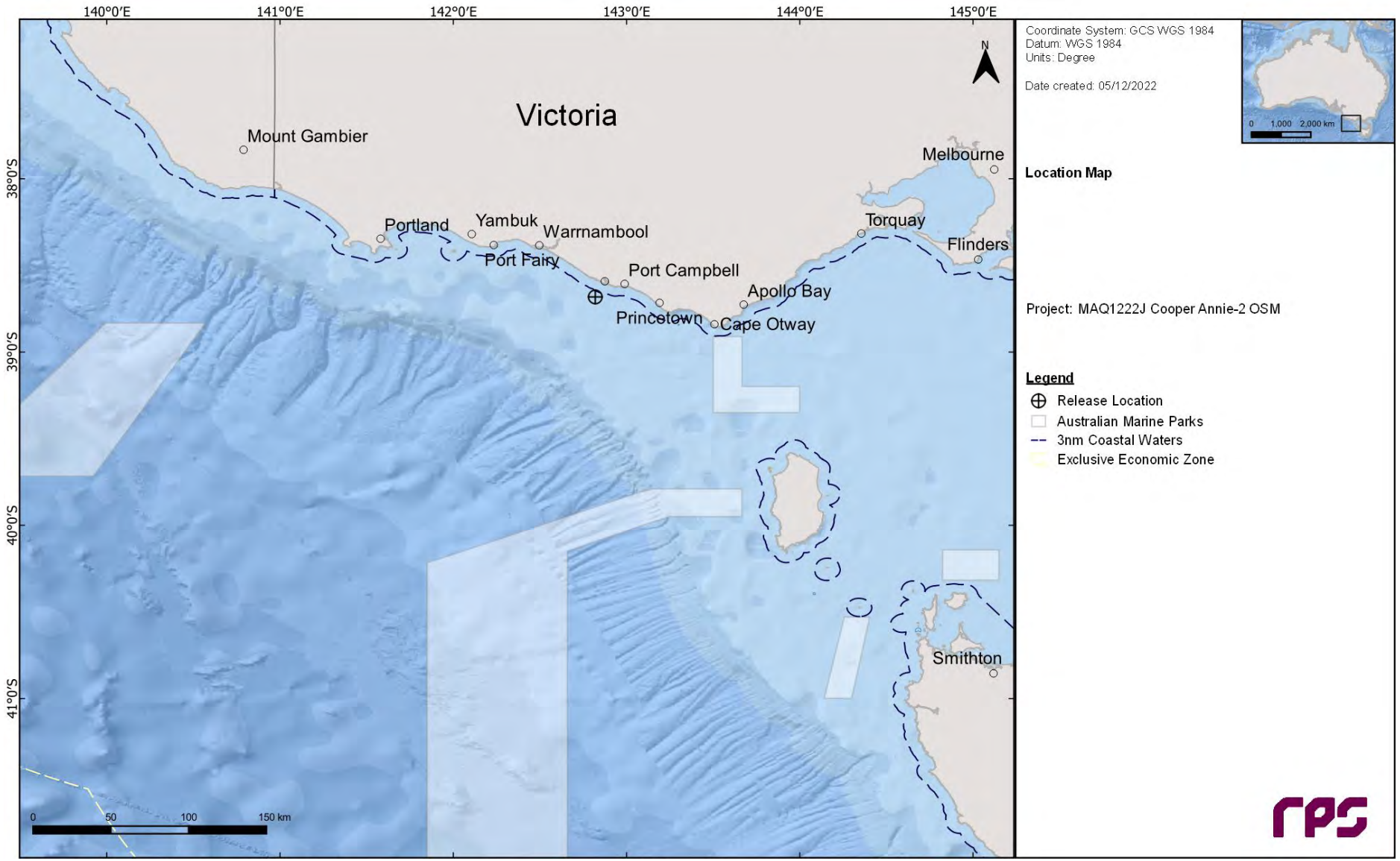

Figure 1.1 Map of the Annie-2 release location.

1.2 What is Oil Spill Modelling?

Oil spill modelling is a valuable tool widely used for risk assessment, emergency response and contingency planning where it can be particularly helpful to proponents and decision makers. By modelling a series of the most likely oil spill scenarios, decisions concerning suitable response measures and strategic locations for deploying equipment and materials can be made, and the locations at most risk can be identified. The two types of oil spill modelling often used are stochastic (Section 1.2.1) and deterministic (Section 1.2.2) modelling.

1.2.1 Stochastic Modelling (Multiple Spill Simulations)

Stochastic oil spill modelling is created by overlaying a great number (often hundreds) of individual, computer-simulated hypothetical spills (NOPSEMA, 2018; Figure 1.2).

Stochastic modelling is a common means of assessing the potential risks from oil spills related to new projects and facilities. Stochastic modelling typically utilises hydrodynamic data for the location in combination with historic wind data. Typically, 100 iterations of the model will be run utilising the data that is most relevant to the season or timing of the project.

The outcomes are often presented as a probability of exposure and is primarily used for risk assessment purposes in view to understand the range of environments that may be affected or impacted by a spill. Elements of the stochastic modelling can also be used in oil spill preparedness and planning.

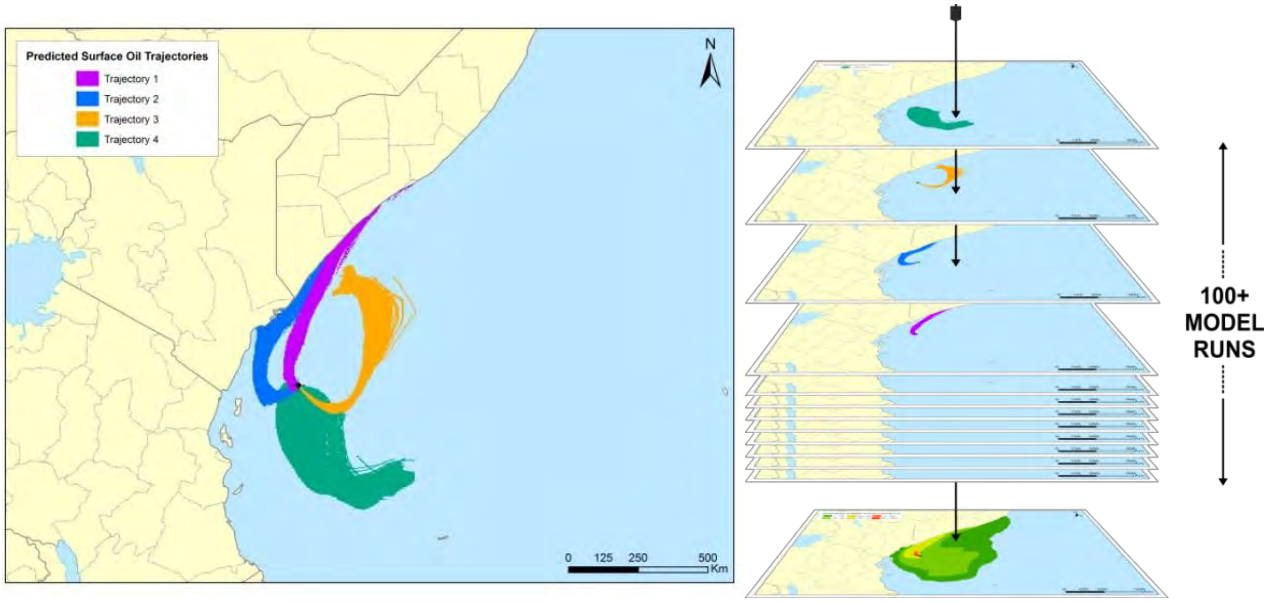

Figure 1.2 Examples of four individual spill trajectories (four replicate simulations) predicted by SIMAP for a spill scenario. The frequency of contact with given locations is used to calculate the probability of impacts during a spill. Essentially, all model runs are overlain (shown as the stacked runs on the right) and the number of times that trajectories contact a given location at a concentration is used to calculate the probability.

1.2.2 Deterministic Modelling (Single Spill Simulation)

Deterministic modelling is the predictive modelling of a single incident subject to a single sample of wind and weather conditions over time (NOPSEMA, 2018; Figure 1.3).

Deterministic modelling is often paired with stochastic modelling to place the large stochastic footprint into perspective. This deterministic analysis is generally a single run selected from the stochastic analysis and serves as the basis for developing the plans and equipment needs for a realistic spill response. Deterministic spills can be selected on several basis such as minimum time to shoreline, largest swept area, maximum volume ashore, longest length of shoreline contacted by oil or largest area of entrained or dissolved hydrocarbons.

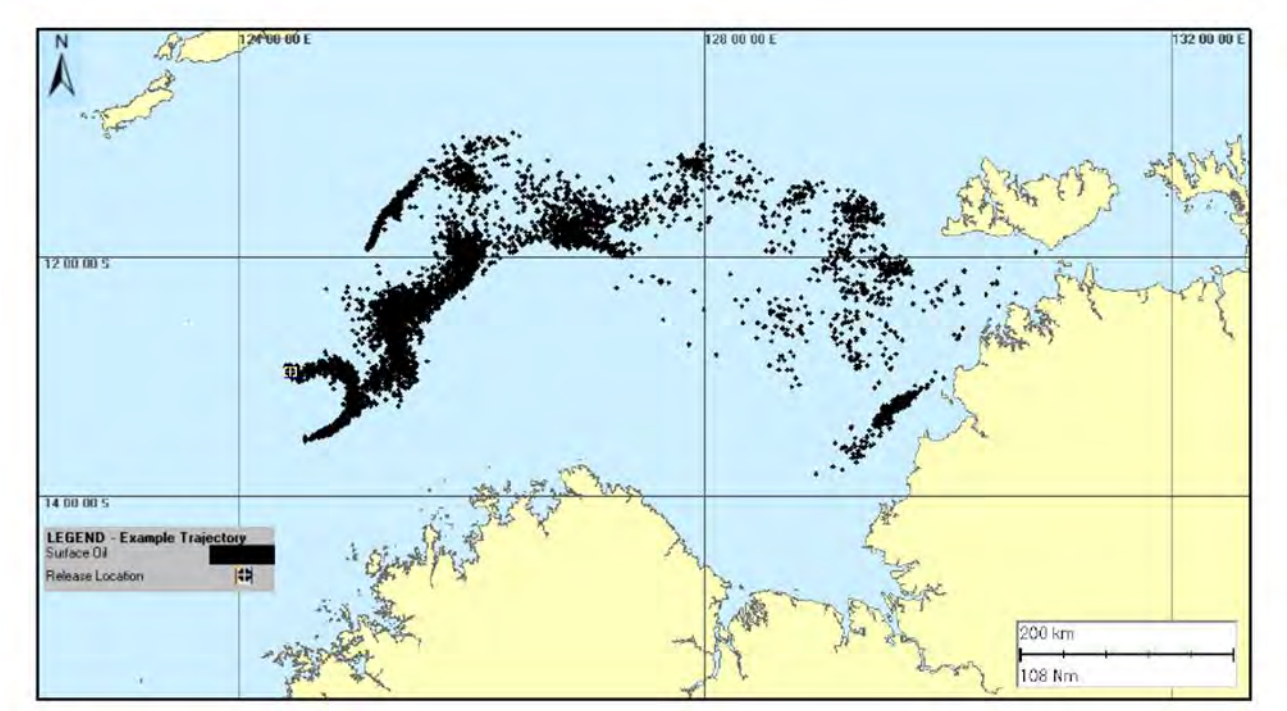

Figure 1.3 Example of an individual spill trajectory predicted by SIMAP for a spill scenario. Note, this image represents surface oil as spillets and do not take any thresholds into consideration.

2 SCOPE OF WORK

The scope of work included the following components:

- Generate 10 years of winds and three-dimensional currents from 2010 to 2019 (inclusive). The currents included the combined influence of tidal and ocean currents.
- Include the wind and current data and characteristics of the MDO as input into the three-dimensional oil spill model (SIMAP), to model the movement, spreading, weathering and shoreline contact by hydrocarbons over time.
- Use SIMAP's stochastic model (also known as a probability model) to calculate exposure to surround waters and shorelines. This involved running 100 randomly selected single trajectory simulations for the scenario, with each simulation having the same spill information (spill volume, duration and composition of hydrocarbons) but varying start times. This ensured that each spill simulation was subject to a unique set of wind and current conditions.
- Results were assessed to determine the exposure to surrounding waters and contact to shorelines based upon the thresholds outlined in the NOPSEMA Oil Spill Modelling Bulletin (NOPSEMA 2019).
- The stochastic modelling results were reviewed, and the "worst case" deterministic runs were identified and presented based on the following criteria (if applicable):
    a. Largest swept area for surface oil above 10 g/m^2
    b. Largest swept area for surface oil above 50 g/m^2
    c. Largest volume of oil ashore
    d. Longest length of shoreline with oil accumulation above 100 g/m^2
    e. Largest area of entrained hydrocarbon exposure above 100 ppb
    f. Largest area of dissolved hydrocarbon exposure above 50 ppb

3 REGIONAL CURRENTS

Bass Strait is a body of water separating Tasmania from the southern Australian mainland, specifically the state of Victoria. The strait is a relatively shallow area of the continental shelf, connecting the southeast Indian Ocean with the Tasman Sea. Currents within the straight are primarily driven by tides, winds, incident continental shelf waves and density driven flows; high winds and strong tidal currents are frequent within the area (Jones, 1980).

The varied geography and bathymetry of the region, in addition to the forcing of the south-eastern Indian Ocean and local meteorology lead to complex shelf and slope circulation patterns (Middleton & Bye, 2007). Figure 3.1 displays seasonal current trends within the Bass Strait. During winter there is a strong eastward water flow due to the strengthening of the South Australian Current (fed by the Leeuwin Current in the Northwest Shelf), which bifurcates with one extension moving though the Bass Strait, and another forming the Zeehan Current off western Tasmania (Sandery & Kämpf, 2007). During summer, water flow reverses off Tasmania, King Island and the Otway Basin travelling eastward, as the coastal current develops due to south-easterly winds.

To accurately describe the variability in currents between the inshore and offshore region, a hybrid regional dataset was developed by combining deep ocean predictions obtained from HYCOM (Hybrid Coordinate Ocean Model) with surface tidal currents developed by RPS. The following sections provide a summary of the hybrid regional dataset.

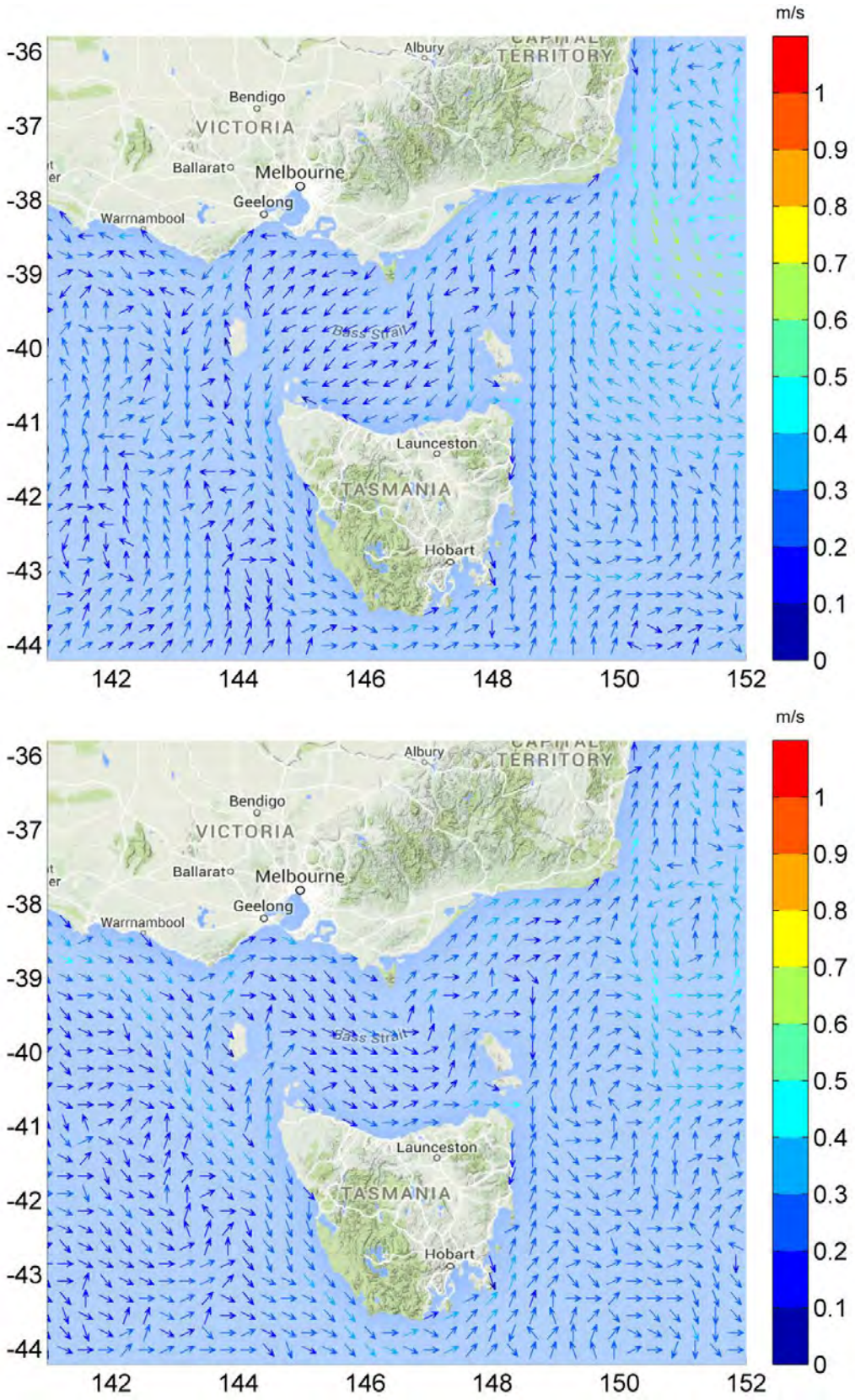

Figure 3.1 HYCOM averaged seasonal surface drift currents during summer (upper image) and winter (lower image).

3.1 Tidal currents

Tidal current data was generated using RPS's advanced ocean/coastal model, HYDROMAP. The HYDROMAP model has been thoroughly tested and verified through field measurements throughout the world for more than 30 years (Isaji & Spaulding, 1984; Isaji, et al., 2001; Zigic, et al., 2003). HYDROMAP tidal current data has been used as input to forecast (in the future) and hindcast (in the past) pollutant spills in Australian waters and forms part of the Australian National Oil Spill Emergency Response System operated by AMSA (Australian Maritime Safety Authority).

HYDROMAP employs a sophisticated sub-gridding strategy, which supports up to six levels of spatial resolution, halving the grid cell size as each level of resolution is employed. The sub-gridding allows for higher resolution of currents within areas of greater bathymetric and coastline complexity, and/or of interest to a study.

The numerical solution methodology follows that of Davies (1977a and 1977b) with further developments for model efficiency by Owen (1980) and Gordon (1982). A more detailed presentation of the model can be found in Isaji and Spaulding (1984) and Isaji et al. (2001).

3.1.1 Grid Setup

The tidal model domain is sub-gridded to a resolution of 500 m for shallow and coastal regions, starting from an offshore (or deep water) resolution of 8 km. The finer grids are progressively allocated in a step-wise fashion to more accurately resolve flows along the coastline, around islands and over regions with more complex bathymetry. Figure 3.2 shows the tidal model grid covering the study domain.

A combination of datasets was used and merged to describe the shape of the seabed within the grid domain (Figure 3.3). These included spot depths and contours which were digitised from nautical charts released by the hydrographic offices as well as Geoscience Australia database and depths extracted from the Shuttle Radar Topography Mission (SRTM30_PLUS) Plus dataset (see Becker et al., 2009).

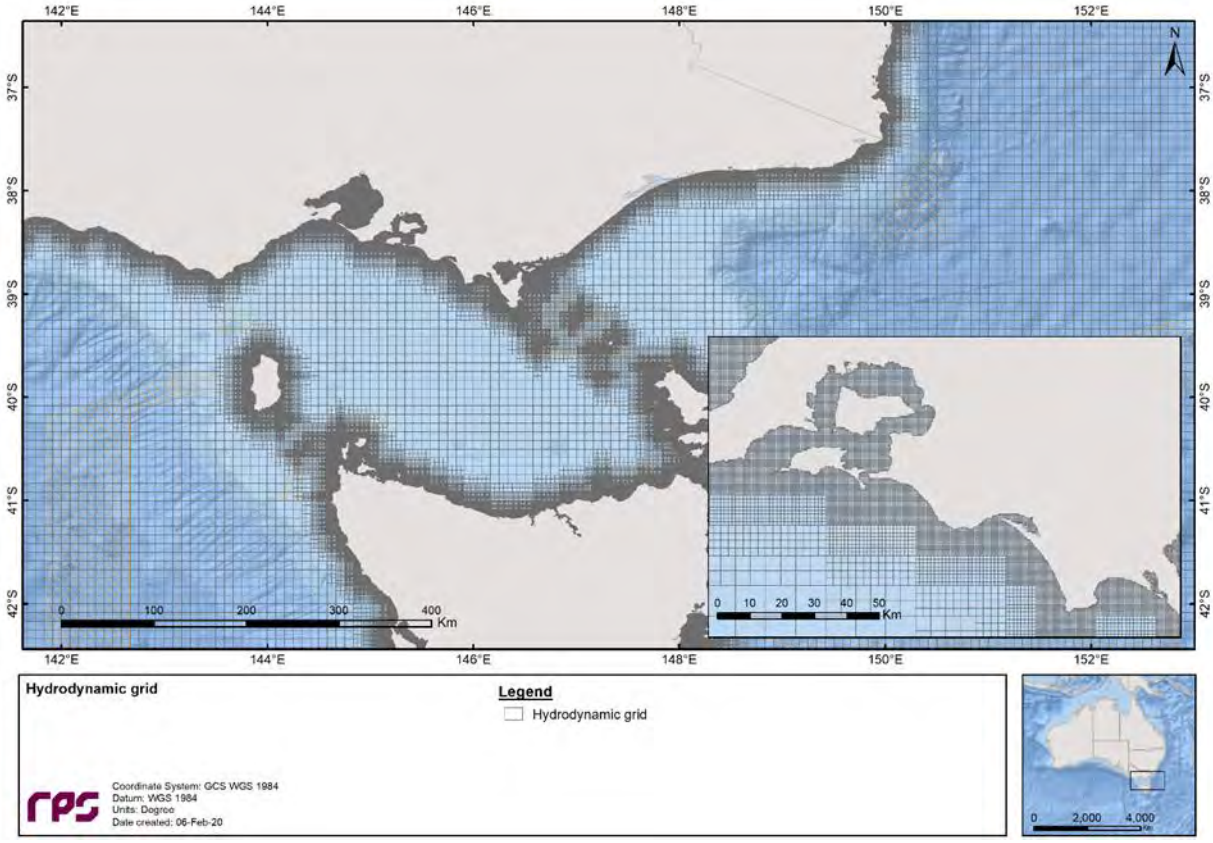

Figure 3.2 Sample of the model grid used to generate the tidal currents for the study region. Higher resolution areas are shown by the denser mesh.

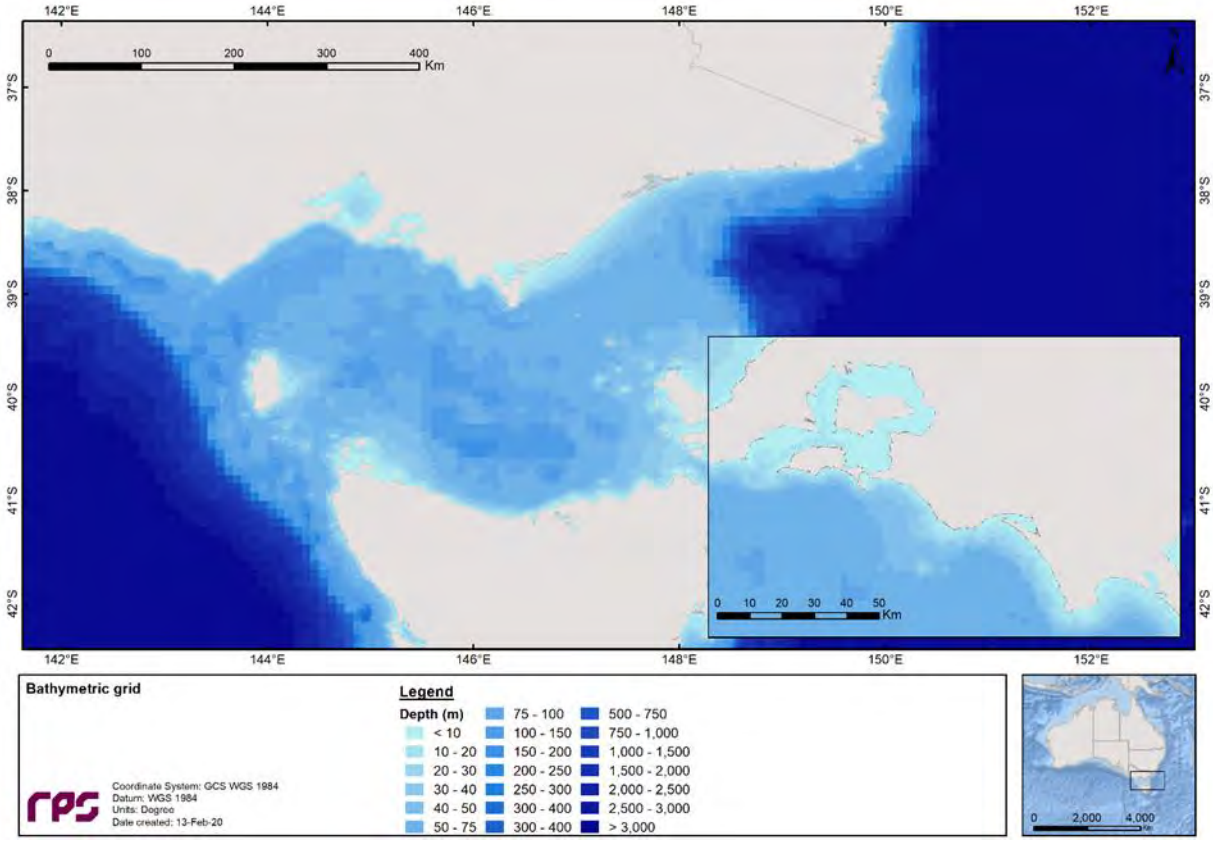

Figure 3.3 Bathymetry defined throughout the tidal model domain.

3.1.2 Tidal Conditions

The ocean boundary data for the regional model was obtained from satellite measured altimetry data (TOPEX/Poseidon 8.0) which provided estimates of the eight dominant tidal constituents at a horizontal scale of approximately 0.25 degrees. The eight major tidal constituents used were K_2, S_2, M_2, N_2, K_1, P_1, O_1 and Q_1. Using the tidal data, time series surface heights were calculated along the open boundaries for the simulation period.

The Topex/Poseidon satellite data has a resolution of 0.25 degrees globally, with higher resolution in coastal regions, and is produced and quality controlled by NASA (National Aeronautics and Space Administration). The data capturing satellites, equipped with two altimeters capable of taking sea level measurements accurate to less than ± 5 cm, measured oceanic surface elevations (and the resultant tides) for the period 1992–2005. In total these satellites carried out 62,000 orbits of the planet. The Topex/Poseidon tidal data has been widely used amongst the oceanographic community, being refereced in more than 2,100 research publications (e.g. Andersen, 1995; Ludicone et al., 1998; Matsumoto et al., 2000; Kostianoy et al., 2003; Yaremchuk & Tangdong, 2004; Qiu & Chen 2010). The Topex/Poseidon tidal data is considered suitably accurate for this study.

3.1.3 Surface Elevation Validation

To ensure that tidal predictions were accurate, predicted surface elevations were compared to data observed at a location situated within the study area (Figure 3.4).

To provide a statistical measure of the model performance, the Index of Agreement (IOA – Willmott, 1981) and the Mean Absolute Error (MAE – Willmott, 1982; Willmott & Matsuura, 2005) were used.

The MAE (Eq.1) is simply the average of the absolute values of the difference between the model-predicted (P) and observed (O) variables. It is a more natural measure of the average error (Willmott and Matsuura, 2005) and more readily understood. The MAE is determined by:

$$MAE = N^{-1} \sum_{i=1}^{N} |P_i - O_i| \qquad \text{Eq.1}$$

Where: N = Number of observations

P_i = Model predicted surface elevation

O_i = Observed surface elevation

The Index of Agreement (IOA; Eq. 2) in contrast, gives a non-dimensional measure of model accuracy or performance. A perfect agreement between the model predicted and observed surface elevations exists if the index gives an agreement value of 1, and complete disagreement between model and observed surface elevations will produce an index measure of 0 (Wilmott, 1981). Willmott et al. (1985) also suggests that values larger than 0.5 may represent good model performance. The IOA is determined by:

$$IOA = 1 - \frac{\sum |X_{model} - X_{obs}|^2}{\sum (|X_{model} - \overline{X_{obs}}| + |X_{obs} - \overline{X_{obs}}|)^2} \qquad \text{Eq.2}$$

Where: X_{model} = Model predicted surface elevation

X_{obs} = Observed surface elevation

Clearly, a greater IOA and lower MAE represent a better model performance.

Figure 3.5 and Figure 3.6 illustrate a comparison of the predicted and observed surface elevations in February 2014. As shown on the graph, the model accurately reproduced the phase and amplitudes throughout the spring and neap tidal cycles.

Table 3-1 shows the IOA and MAE values for the selected tide station locations indicating that the model is performing well.

Table 3-1 Statistical comparison between the observed and HYDROMAP predicted surface elevations.

Tide Station	IOA	MAE (m)
Gabo Island	0.98	0.08
Port MacDonnell	0.98	0.05
Port Welshpool	0.92	0.30
Portland	0.97	0.07
Stack Island	0.96	0.22

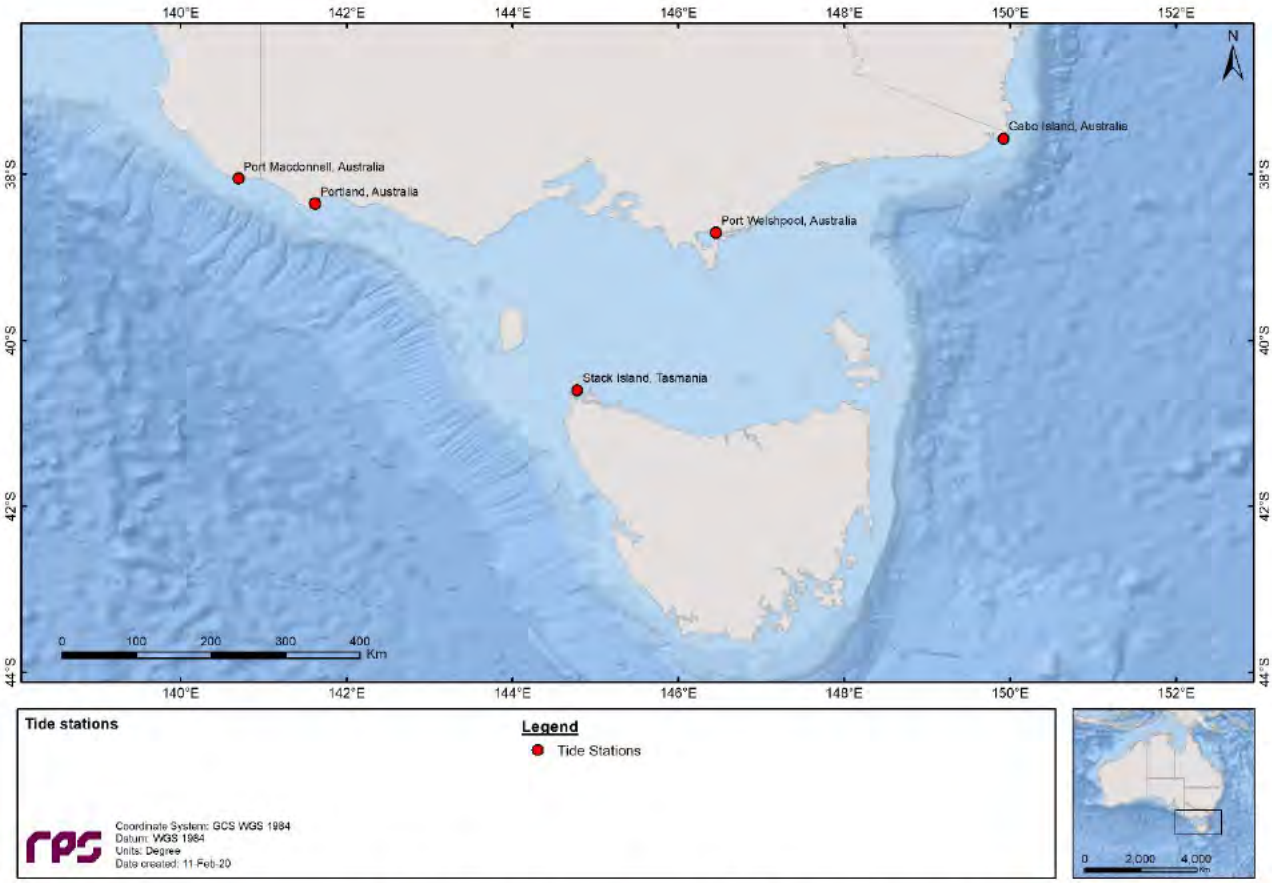

Figure 3.4 Location of the tide stations used in the surface elevation validation.

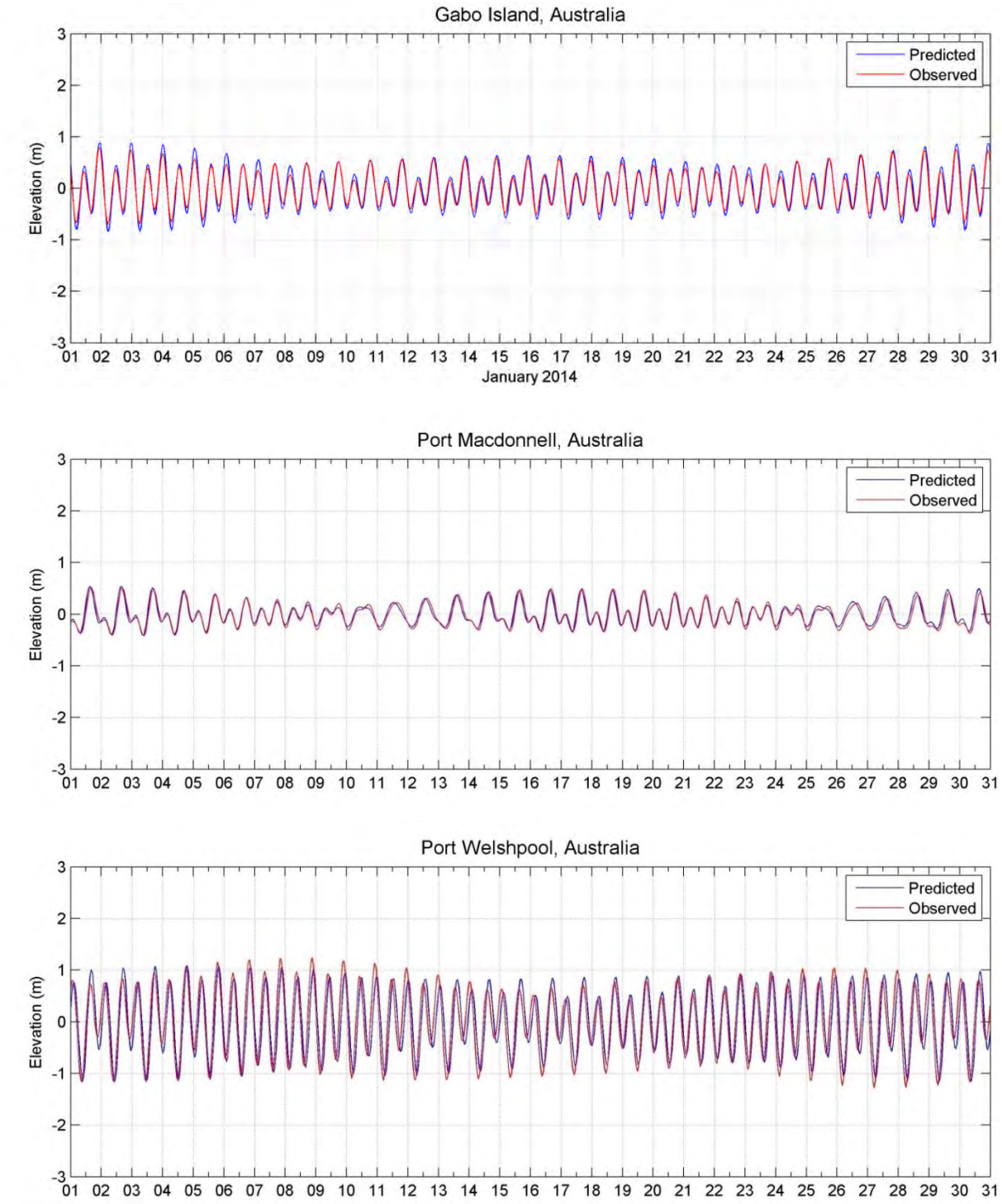

Figure 3.5 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation at tidal stations Gabo Island (upper image), Port MacDonnell (middle image) and Port Welshpool (lower image).

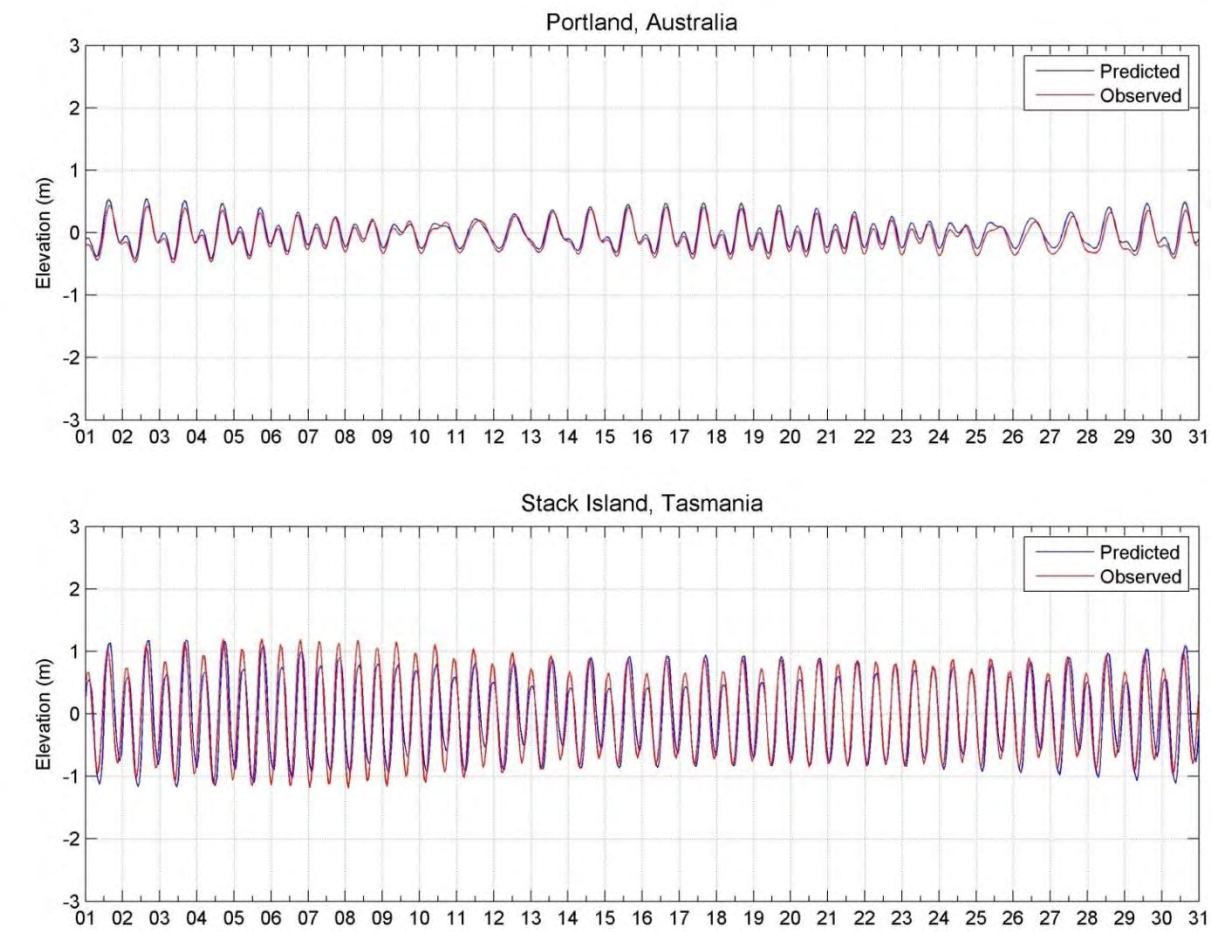

Figure 3.6 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation at tidal stations Portland (upper image) and Stack Island (lower image).

3.2 Ocean Currents

Data describing the flow of ocean currents for the years 2010 to 2019 (inclusive) was obtained from HYCOM (Hybrid Coordinate Ocean Model, (Chassignet et al., 2007), which is operated by the HYCOM Consortium, sponsored by the Global Ocean Data Assimilation Experiment (GODAE). HYCOM is a data-assimilative, three-dimensional ocean model that is run as a hindcast (for a past period), assimilating time-varying observations of sea surface height, sea surface temperature and in-situ temperature and salinity measurements (Chassignet et al., 2009). The HYCOM predictions for drift currents are produced at a horizontal spatial resolution of approximately 8.25 km (1/12th of a degree) over the region, at a frequency of once per day. HYCOM uses isopycnal layers in the open, stratified ocean, but uses the layered continuity equation to make a dynamically smooth transition to a terrain-following coordinate in shallow coastal regions, and to z-level coordinates in the mixed layer and/or unstratified seas.

3.3 Surface Currents

Table 3-2 presents the average and maximum net surface current speeds nearby the release location by combining the ocean and tidal currents. Current speeds varied throughout the year with maximum current speeds ranging between approximately 0.72 m/s (February) and 1.10 m/s (September). The dominant surface current directions throughout the year were identified as (towards) the west during summer months and east during the winter months.

Figure 3.7 and Figure 3.8 show the monthly and total surface current rose distributions for the selected location.

Note the convention for defining current direction is the direction the current flows towards, which is used to reference current direction throughout this report. Each branch of the rose represents the currents flowing to that direction, with north to the top of the diagram. Sixteen directions are used. The branches are divided into segments of different colour, which represent the current speed ranges for each direction. Speed intervals of 0.1 m/s are predominantly used in these current roses. The length of each coloured segment is relative to the proportion of currents flowing within the corresponding speed and direction.

Table 3-2 Predicted monthly average and maximum surface current speeds for the selected location. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.17	0.77	West
February	0.19	0.72	West
March	0.18	0.92	West
April	0.15	0.83	East and West
May	0.19	0.90	East
June	0.19	1.07	East
July	0.24	1.07	East
August	0.23	1.05	East
September	0.20	1.10	East
October	0.19	0.88	East
November	0.18	0.82	East and West
December	0.18	0.92	East and West
Minimum	**0.15**	**0.72**	
Maximum	**0.24**	**1.10**	

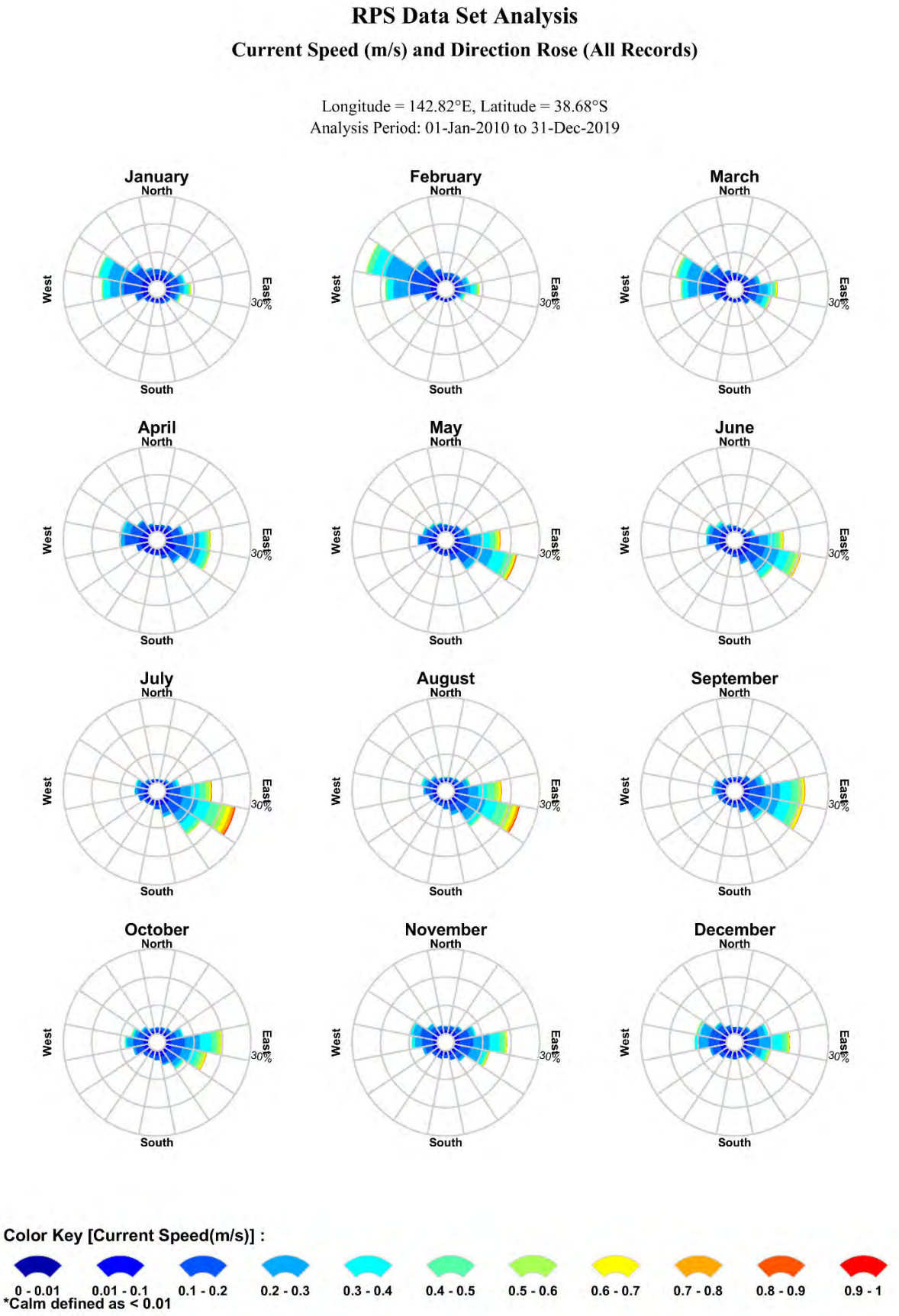

Figure 3.7 Monthly surface current rose plots nearby the release location (derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

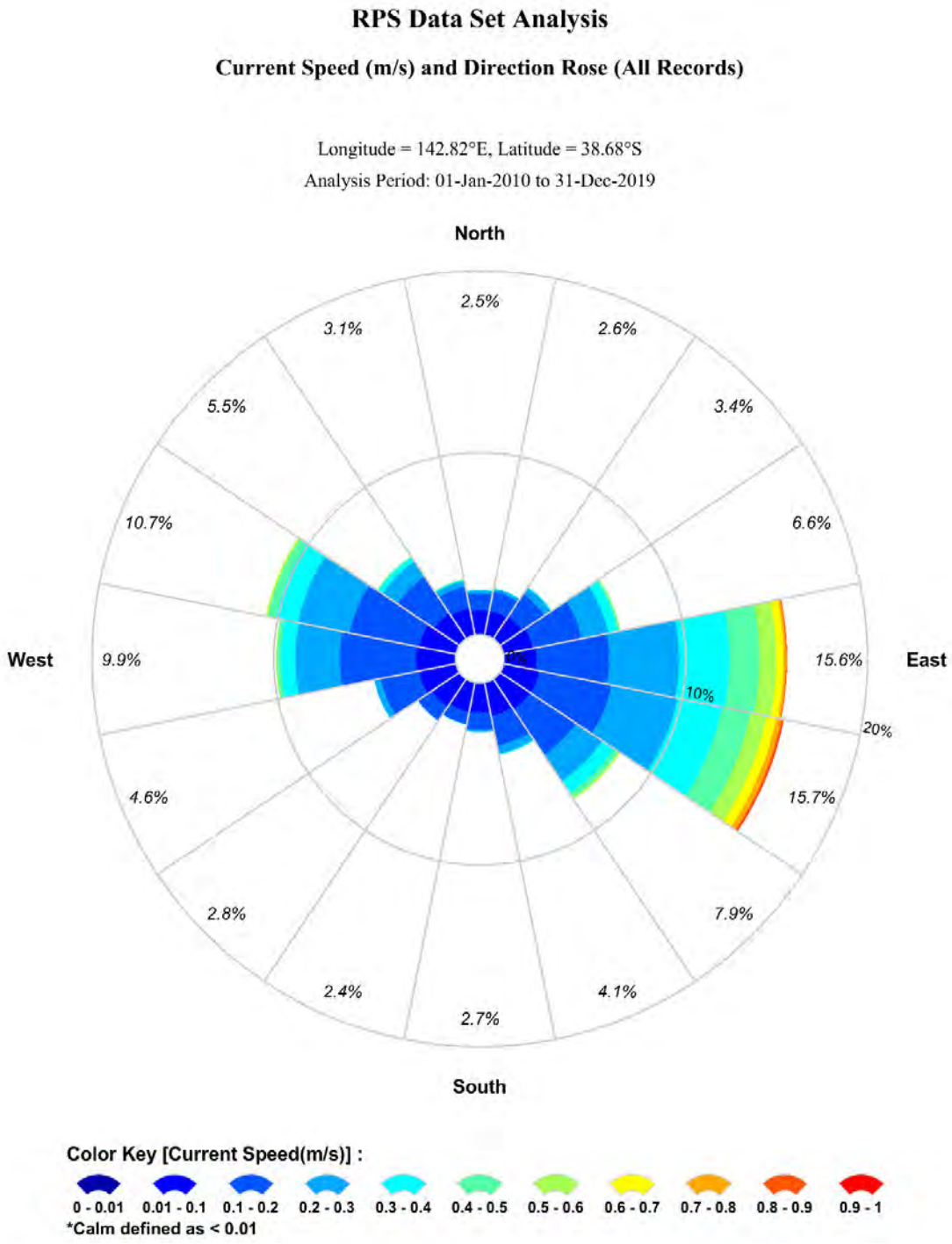

Figure 3.8 Total surface current rose plot nearby the release location (derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

4 WIND DATA

High resolution wind data for the years 2010 to 2019 (inclusive) was sourced from the National Centre for Environmental Prediction (NCEP) Climate Forecast System Reanalysis dataset (CFSR; see Saha et al., 2010). The CFSR wind model is a fully coupled, data-assimilative hindcast model representing the interaction between the earth's oceans, land and atmosphere. The gridded wind data output is available at ¼ of a degree resolution (~33 km) and 1-hourly time intervals. Figure 4.1 shows the spatial resolution of the wind field used as input into the oil spill model.

Table 4-1 presents the monthly average and maximum winds derived from a CFSR wind node nearby the release location. The wind data demonstrated average monthly wind speeds ranging from 10 knots during summer to 13 knots during winter, with maximums ranging between 30 knots (January and November) and 42 knots (June). The dominant wind direction throughout the year ranged from the southeast in summer, through the westerly sectors to the northwest for winter, before returning to the southeast at the end of the year.

Figure 4.2 and Figure 4.3 show the monthly and total wind rose distributions derived from the CFSR data for the selected node nearby the release location.

Note that the atmospheric convention for defining wind direction, that is, the direction the wind blows from, is used to reference wind direction throughout this report. Each branch of the rose represents wind coming from that direction, with north to the top of the diagram. Sixteen directions are used. The branches are divided into segments of different colour, which represent wind speed ranges from that direction. Speed ranges of 5 knots are typically used in these wind roses. The length of each segment within a branch is proportional to the frequency of winds blowing within the corresponding range of speeds from that direction.

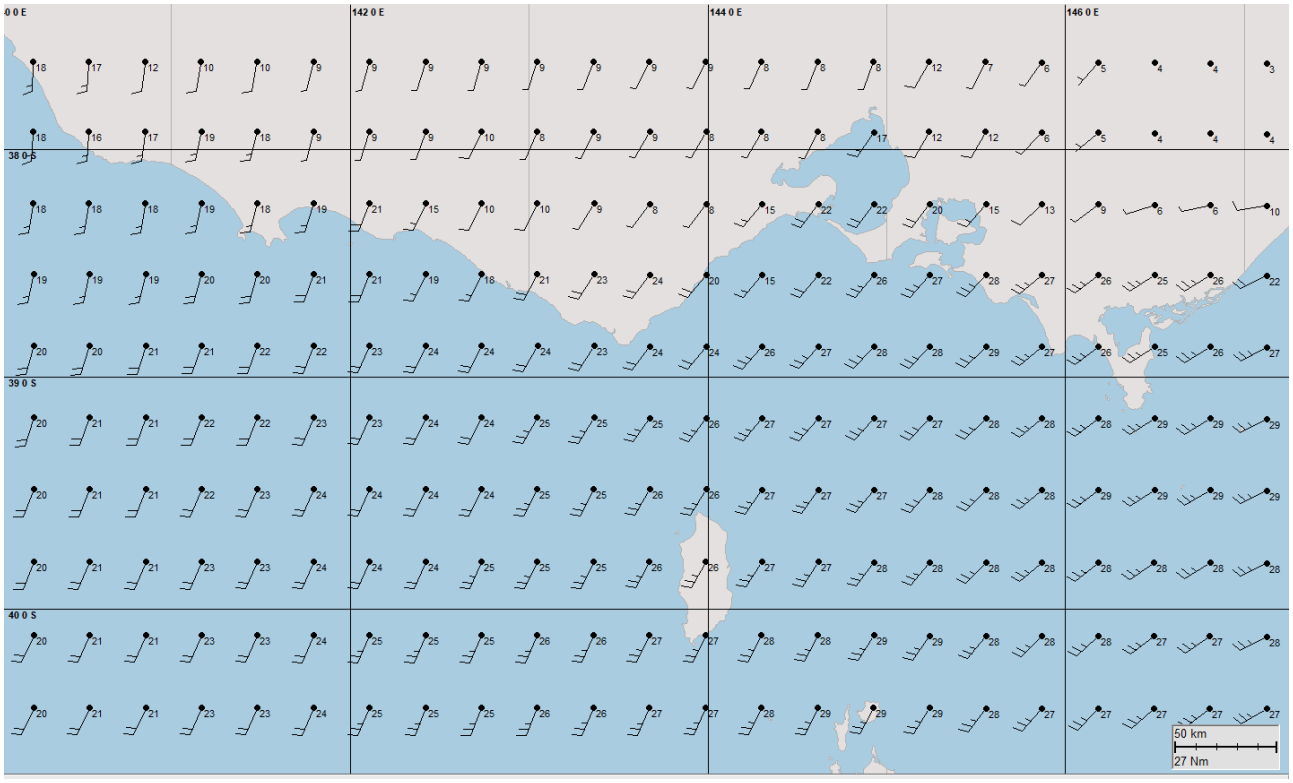

Figure 4.1 Spatial resolution of the CFSR modelled wind data used as input into the oil spill model.

Table 4-1 Predicted average and maximum winds representative for the selected node nearby the release location. Data derived from CFSR hindcast model from 2010–2019 (inclusive).

Month	Average wind speed (knots)	Maximum wind speed (knots)	General direction(s) (From)
January	10	30	South-Southeast
February	10	31	South-Southeast
March	10	34	Southeast
April	10	33	West
May	11	32	West
June	11	42	Northwest
July	13	35	Northwest
August	13	39	Northwest
September	12	41	West
October	11	31	West
November	10	30	West
December	10	31	West and Southeast
Minimum	**10**	**30**	
Maximum	**13**	**42**	

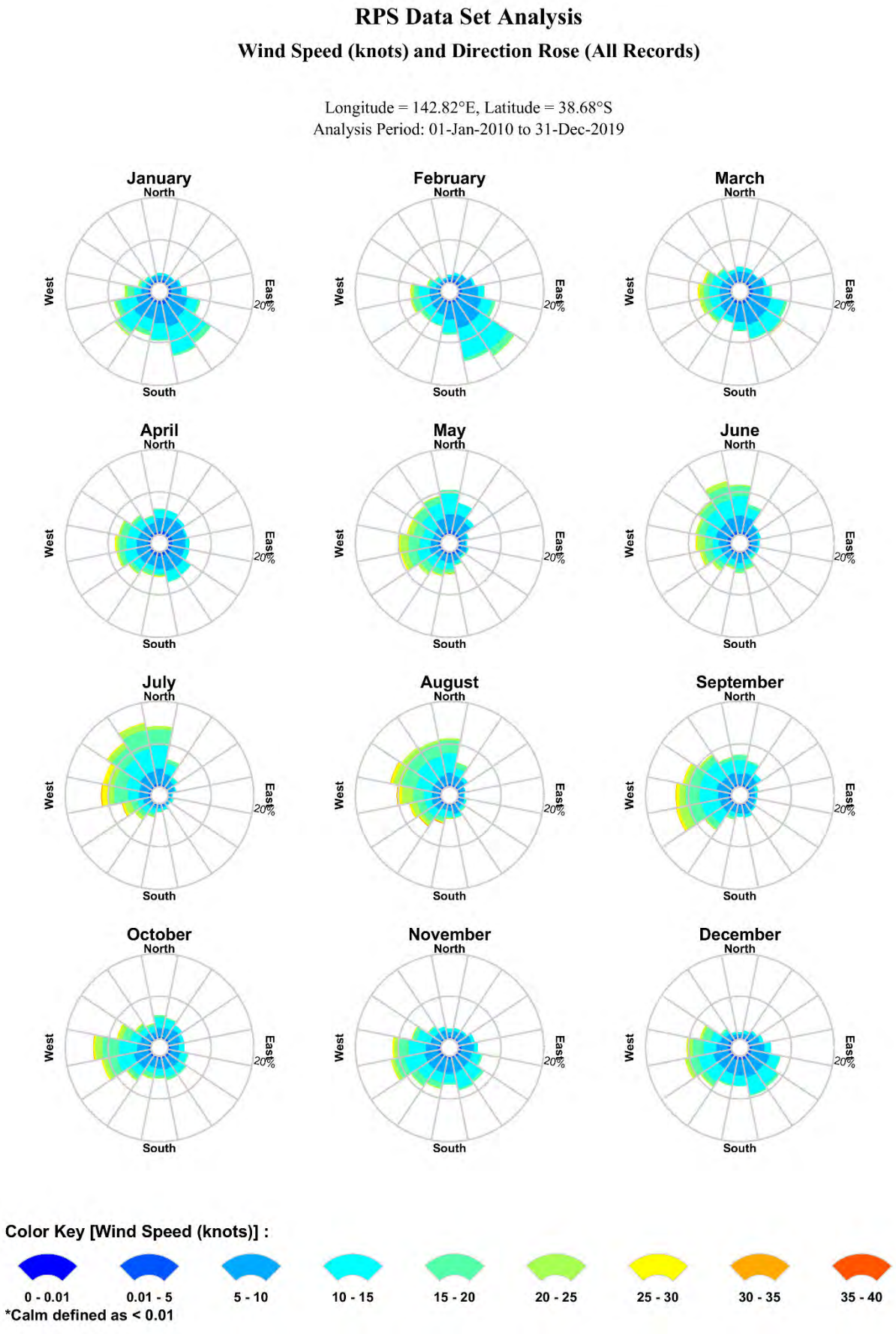

Figure 4.2 Modelled monthly wind rose distributions from 2010–2019 (inclusive) for the node nearby the release location.

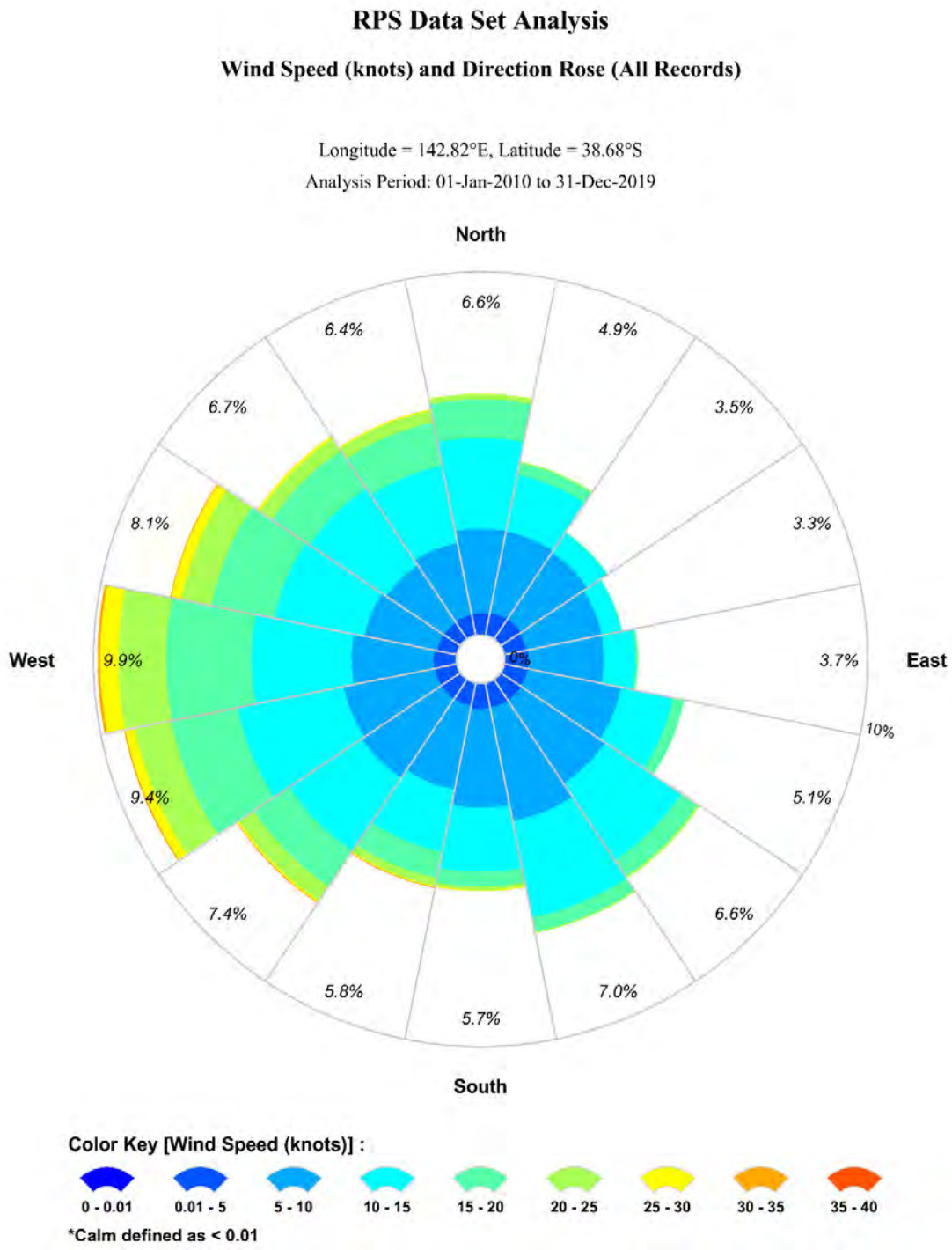

Figure 4.3 Modelled total wind rose distributions from 2010–2019 (inclusive) for the node nearby the release location.

5 WATER TEMPERATURE AND SALINITY

The monthly sea temperature and salinity profiles of the water column within the study was obtained from the World Ocean Atlas 2013 database produced by the National Oceanographic Data Centre (National Oceanic and Atmospheric Administration) and its co-located World Data Center for Oceanography (see Levitus et al., 2013). These parameters were used as factors to inform the weathering, movement and evaporative loss of hydrocarbon spills in the surface and sub-surface layers.

Table 5-1 presents the sea temperature and salinity of the surface layer nearby the selected location. The monthly average sea surface temperatures ranged between 13.4°C (September) and 18.2°C (March). The monthly average surface salinity values remain relatively consistent ranging between 35.4 psu and 35.6 psu.

Table 5-1 Monthly average sea surface temperature and salinity in the study area.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	18.0	17.8	18.2	16.7	16.4	15.8	15.0	14.7	13.4	14.6	15.2	17.5
Salinity (psu)	35.5	35.4	35.6	35.4	35.5	35.5	35.6	35.5	35.4	35.4	35.5	35.5

6 OIL SPILL MODEL – SIMAP

Modelling of the fate of oil was performed using the Spill Impact Mapping Analysis Program (SIMAP). SIMAP is designed to simulate the fate and effects of spilled hydrocarbons for both the surface and subsurface releases (Spaulding et al., 1994; French et al., 1999; French-McCay, 2003, 2004; French-McCay et al., 2004).

SIMAP has been used to predict the weathering and fate of oil spills during and after major incidents including: Montara (Australia) well blowout August 2009 in the Timor Sea (Asia-Pacific ASA, 2010); Macondo (USA) well blowout April 2010 in the Gulf of Mexico; Bohai Bay (China) oil spill August 2011; and the pipeline oil spill July 2013 in the Gulf of Thailand.

The SIMAP model calculates the transport, spreading, entrainment, evaporation and decay of surface hydrocarbon slicks as well as the entrained and dissolved oil components in the water column, either from surface slicks or from oil discharged subsea. The movement and weathering of the spilled oil is calculated for specific oil types. Input specifications for oil mixtures include the density, viscosity, pour point, distillation curve (volume lost versus temperature) and the aromatic/aliphatic component ratios within given boiling point (BP) ranges.

SIMAP is a three-dimensional model that allows for various response actions to be modelled including oil removal from skimming, burning, or collection booms, and surface and subsurface dispersant application.

The SIMAP oil spill model includes advanced weathering algorithms, specifically focussed on unique oils that tend to form emulsions and/or tar balls. The weathering algorithms are based on 5 years of extensive research conducted in response to the Deepwater Horizon oil spill in the Gulf of Mexico (French-McCay et al., 2015).

Biodegradation is included in the oil spill model. In the model, SIMAP, degradation is calculated for the surface slick, deposited oil on the shore, the entrained oil and dissolved constituents in the water column, and oil in the sediments. For surface oil, water column oil and sedimented oil a first order degradation rate is specified. Biodegradation rates are relatively high for hydrocarbons in dissolved state or in dispersed small droplets.

6.1 Stochastic Modelling

For the stochastic modelling presented herein, 100 oil spills were modelled for the scenarios using the same spill information (release location, spill volume, duration and oil type) but with varied start dates. During each simulation, the model records whether any grid cells are exposed to any oil concentrations, the concentrations involved and the elapsed time before exposure. The results of all 100 oil spill simulations were analysed to determine the following statistics for every grid cell:

- Exposure load (concentrations and volumes);
- Minimum time before exposure;
- Probability of contact above defined concentrations;
- Volume of oil that may accumulate on shorelines from any single simulation;
- Concentration that might occur on sections of individual shorelines;
- Exposure (instantaneous and/or over a specified duration) to dissolved hydrocarbons in the water column; and
- Exposure (instantaneous and/or over a specified duration) to entrained hydrocarbons in the water column.

6.2 Floating, Shoreline and In-Water Thresholds

The thresholds and their relationship to exposure for the sea surface, shoreline and water column (entrained and dissolved hydrocarbons) are presented in Sections 6.2.1 to 6.2.3. Supporting justifications of the adopted thresholds applied during the study and additional context relating to the area of potential exposure are also provided. It is important to note that the thresholds herein are based on NOPSEMA (2019).

6.2.1 Floating Oil Exposure Thresholds

The modelling results can be presented to any levels; therefore, thresholds have been specified (based on scientific literature) to record floating oil exposure to the sea-surface at meaningful levels only, described in the following paragraphs.

The low threshold 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) (see Table 6-1). Figure 6.1 shows photographs highlighting the difference in appearance between a silvery sheen, rainbow sheen and metallic sheen. 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. Table 6-1 provides a description of the appearance in relation to exposure zone thresholds used to classify the zones of floating oil exposure.

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).

Scholten et al. (1996) and Koops et al. (2004) indicated that at oil concentrations on the sea surface of 25 g/m^2 (or greater), would be harmful for all birds that have landed in an oil film due to potential contamination of their feathers, with secondary effects such as loss of temperature regulation and ingestion of oil through preening. The appearance of oil at this thickness is also described as metallic sheen (Bonn Agreement, 2009). For this study the high exposure threshold was set to 50 g/m^2 and above based on NOPSEMA (2019). This threshold can also be used to inform response planning.

Table 6-2 defines the thresholds used to classify the zones of floating oil exposure reported herein.

Table 6-1 The Bonn Agreement Oil Appearance Code.

Code	Description Appearance	Layer Thickness Interval (g/m^2 or µm)	Litres per km^2
1	Sheen (silvery/grey)	0.04 – 0.30	40 – 300
2	Rainbow	0.30 – 5.0	300 – 5,000
3	Metallic	5.0 – 50	5,000 – 50,000
4	Discontinuous True Oil Colour	50 – 200	50,000 – 200,000
5	Continuous True Oil Colour	≥ 200	≥ 200,000

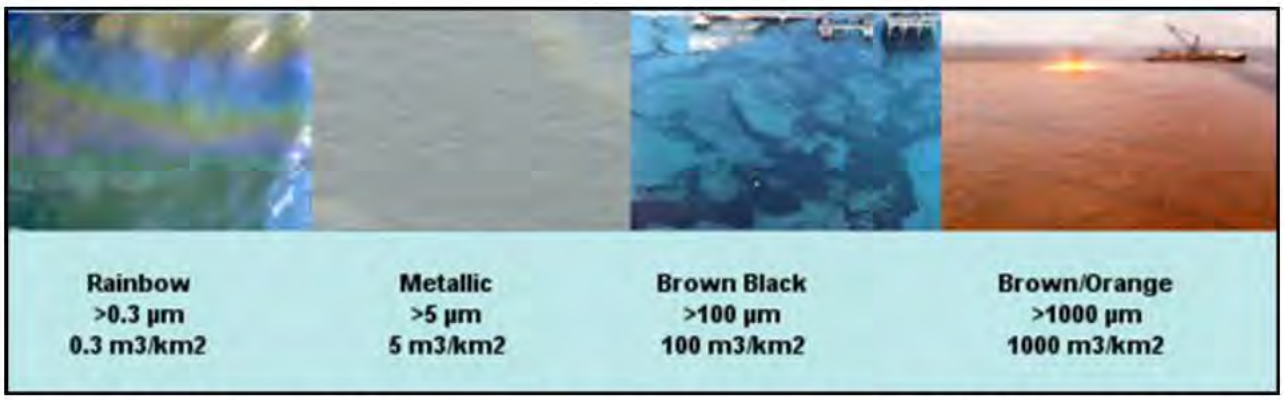

Figure 6.1 Photographs showing the difference between oil colour and thickness on the sea surface (source: adapted from Oil Spill Solutions, 2015).

Table 6-2 Floating oil exposure thresholds used in this report (in alignment with NOPSEMA (2019)).

Threshold level	Floating oil (g/m^2)	Description
Low	1	Approximates range of socioeconomic effects and establishes planning area for scientific monitoring
Moderate	10	Approximates lower limit for harmful exposures to birds and marine mammals
High	50	Approximates surface oil slick and informs response planning

6.2.2 Shoreline Accumulation Thresholds

There are many different types of shorelines, ranging from cliffs, rocky beaches, sandy beaches, mud flats and mangroves, and each of these influences the volume of oil that can remain 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. A sandy beach shoreline was assumed as the default shoreline type for the modelling herein, as it allows for the highest carrying capacity of oil (of the available open/exposed shoreline types). Hence the results contained herein would be indicative of a worst-case scenario, where the highest volume of oil may be stranded on the shoreline (when compared to other shoreline types, such as exposed rocky shores).

In previous risk assessment studies, French-McCay et al. (2005a; 2005b) used a threshold of 10 g/m^2 to assess the potential for shoreline accumulation. This is a conservative threshold used to define regions of socio-economic impact, such as triggering temporary closures of adjoining fisheries or the need for shore clean-up on beaches or man-made features/amenities (breakwaters, jetties, marinas, etc.). It would equate to approximately 2 teaspoons of hydrocarbon per square meter of shoreline accumulation. The appearance is described as a stain/film. On that basis, the 10 g/m^2 shoreline accumulation threshold has been selected to define the zone of potential "low shoreline accumulation".

French et al. (1996) and French-McCay (2009) define a shoreline oil accumulation threshold of 100 g/m^2, or above, would potentially harm shorebirds and wildlife (furbearing aquatic mammals and marine reptiles on or along the shore) based on studies for sub-lethal and lethal impacts. This threshold has been used in previous environmental risk assessment studies (see French-McCay, 2003; French-McCay et al., 2004, French-McCay et al., 2011; 2012; NOAA, 2013). Additionally, a shoreline concentration of 100 g/m^2, or above, is the minimum limit that the oil can be effectively cleaned according to the AMSA (2015) guideline. This threshold equates to approximately ½ a cup of oil per square meter of shoreline accumulation. The appearance is described as a thin oil coat. Therefore, 100 g/m^2 has been selected to define the zone of potential "moderate shoreline accumulation".

Observations by Lin & Mendelssohn (1996), demonstrated that loadings of more than 1,000 g/m^2 of hydrocarbon during the growing season would be required to impact marsh plants significantly. Similar thresholds have been found in studies assessing hydrocarbon impacts on mangroves (Grant et al., 1993; Suprayogi & Murray, 1999). Hence, 1,000 g/m^2 has been selected to define the zone of potential "high shoreline accumulation". It equates to approximately 1 litre of hydrocarbon per square meter of shoreline accumulation. The appearance is described as a hydrocarbon cover.

It is worth noting that the shoreline accumulation thresholds derived from extensive literature review (outlined in Table 6-3) agree with the commonly used threshold values for oil spill modelling specified in NOPSEMA (2019).

Table 6-3 Thresholds used to assess shoreline accumulation.

Threshold level	Shoreline loading (g/m^2)	Description
Low (socioeconomic/sublethal)	10	Predicts potential for some socio-economic impact
Moderate	100	Loading predicts area likely to require clean-up effort
High	> 1,000	Loading predicts area likely to require intensive clean-up effort

6.2.3 In-water Exposure Thresholds

Oil is a mixture of thousands of hydrocarbons of varying physical, chemical, and toxicological characteristics, and therefore, demonstrate varying fates and impacts on organisms. As such, for in-water exposure, the SIMAP model provides separate outputs for dissolved and entrained hydrocarbons from oil droplets. The consequences of exposure to dissolved and entrained components will differ because they have different modes and magnitudes of effect.

Entrained hydrocarbon concentrations were calculated based on oil droplets that are suspended in the water column, though not dissolved. The composition of this oil would vary with the state of weathering (oil age) and may contain soluble hydrocarbons when the oil is fresh. Calculations for dissolved hydrocarbons specifically calculates oil components which are dissolved in water, which are known to be the primary source of toxicity exerted by oil.

6.2.3.1 Dissolved Hydrocarbons

Laboratory studies have shown that dissolved hydrocarbons exert most of the toxic effects of oil 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). Dissolved hydrocarbons are taken up by organisms directly from the water column by absorption through external surfaces and gills, as well as through the digestive tract. Thus, soluble hydrocarbons are termed “bioavailable”.

Hydrocarbon compounds vary in water-solubility and the toxicity exerted by individual compounds is inversely related to solubility, however bioavailability will be modified by the volatility of individual compounds (Nirmalakhandan & Speece, 1988; Blum & Speece, 1990; McCarty, 1986; McCarty et al., 1992a, 1992b; Mackay et al., 1992; McCarty & Mackay, 1993; Verhaar et al., 1992, 1999; Swartz et al., 1995; French-McCay, 2002; McGrath and Di Toro, 2009). Of the soluble compounds, the greatest contributor to toxicity for water-column and benthic organisms are the lower-molecular-weight aromatic compounds, which are both volatile and soluble in water. Although they are not the most water-soluble hydrocarbons within most oil types, the polynuclear aromatic hydrocarbons (PAHs) containing 2-3 aromatic ring structures typically exert the largest narcotic effects because they are semi-soluble and not highly volatile, so they persist in the environment long enough for significant accumulation to occur (Anderson et al., 1974, 1987; Neff & Anderson, 1981; Malins & Hodgins, 1981; McAuliffe, 1987; NRC, 2003). The monoaromatic hydrocarbons (MAHs), including the BTEX compounds (benzene, toluene, ethylbenzene, and xylenes), and the soluble alkanes (straight chain hydrocarbons) also contribute to toxicity, but these compounds are highly volatile, so that their contribution will be low when oil is exposed to evaporation and higher when oil is discharged at depth where volatilisation does not occur (French-McCay, 2002).

French-McCay (2002) reviewed available toxicity data, where marine biota was exposed to dissolved hydrocarbons prepared from oil mixtures, finding that 95% of species and life stages exhibited 50% population mortality (LC_{50}) between 6 and 400 ppb total PAH concentration after 96 hrs exposure, with an average of 50 ppb. Hence, concentrations lower than 6 ppb total PAH value should be protective of 97.5% of species and life stages even with exposure periods of days (at least 96 hours). Early life-history stages of fish appear to be more sensitive than older fish stages and invertebrates.

Exceedances of 10, 50 or 400 ppb over a 1 hour timestep (see Table 6-4) was applied to indicate increasing potential for sub-lethal to lethal toxic effects (or low to high), based on NOPSEMA (2019).

6.2.3.2 Entrained Hydrocarbons

Entrained hydrocarbons consist of oil droplets that are suspended in the water column and insoluble. 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).

The 10 ppb threshold represents the very lowest concentration and corresponds generally with the lowest trigger levels for chronic exposure for entrained hydrocarbons in the ANZECC & ARMCANZ (2000) water quality guidelines. Due to the requirement for relatively long exposure times (> 24 hours) for these concentrations to be significant, they are likely to be more meaningful for juvenile fish, larvae and planktonic

organisms that might be entrained (or otherwise moving) within the entrained plumes, or when entrained hydrocarbons adhere to organisms or trapped against a shoreline for periods of several days or more.

This exposure zone is not considered to be of significant biological impact and is therefore outside the adverse exposure zone. This exposure zone represents the area contacted by the spill. This area does not define the area of influence as it is considered that the environment will not be affected by the entrained hydrocarbon at this level.

Thresholds of 10 ppb and 100 ppb were applied over a 1-hour time exposure (Table 6-4), to cover the range of thresholds outlined in ANZECC & ARMCANZ (2000) water quality guidelines, the incremental change for greater potential effect and is per NOPSEMA (2019).

A complicating factor that should be considered when assessing the consequence of dissolved and entrained oil distributions is that there will be some areas where both physically entrained oil droplets and dissolved hydrocarbons co-exist. Higher concentrations of each will tend to occur close to the source where sea conditions can force mixing of relatively unweathered oil into the water column, resulting in more rapid dissolution of soluble compounds.

Table 6-4 Dissolved and entrained hydrocarbon exposure values assessed over a 1-hour time step, as per NOPSEMA (2019).

	Exposure level	In-water threshold (ppb)	Description
Dissolved hydrocarbons	Low	10	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
	Moderate	50	Approximates potential toxic effects, particularly sublethal effects to sensitive species
	High	400	Approximates toxic effects including lethal effects to sensitive species
Entrained hydrocarbons	Low	10	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
	High	100	As appropriate given oil characteristics for informing risk evaluation

7 HYDROCARBON PROPERTIES

7.1 Physical Properties

Table 7-1 and Table 7-2 present the physical properties and boiling point ranges of the MDO.

The MDO has an API of 24 and a density of 890 kg/m^3 (at 25 ºC) with a viscosity value (14.0 cP at 25 ºC) classifying it as a Group II (light-persistent) oil according to the International Tankers Owners Pollution Federation (ITOPF, 2014) and US EPA/USCG classifications.

The MDO is a mixture of volatile and persistent hydrocarbons with high proportions of semi- and low-volatile components. In favourable evaporation conditions, about 4.0% of the oil mass should evaporate within the first 12 hours (BP < 180°C), a further 32% should evaporate within the first 24 hours (180°C < BP < 265°C) and a further 54% should evaporate over several days (265°C < BP < 380°C). Approximately 10% of the oil is shown to be persistent.

The boiling points (BP) are dictated by the length of the carbon chains, with the longer and more complex compounds having a higher boiling point, and therefore lower volatility and evaporation rate. Typical evaporation times once the hydrocarbons reach the surface and are exposed to the atmosphere are:

- Up to 12 hours for the C_4 to C_{10} compounds (BP <180 °C).
- Up to 24 hours for the C_{11} to C_{15} compounds (BP 180-265 °C).
- Several days for the C_{16} to C_{20} compounds (BP 265-380 °C).
- Not applicable for the residual compounds (BP >380°C), which will resist evaporation, persist in the marine environment for longer periods, and be subject to relatively slow degradation.

Table 7-1 Physical properties of MDO.

Characteristic	MDO
Density (kg/m^3)	890 (@ 25 °C)
API	24
Dynamic viscosity (cP)	14.0 (@ 25 °C)
Pour point (°C)	-9
Hydrocarbon property category	Group II
Hydrocarbon property classification	Light - Persistent

Table 7-2 Boiling point ranges of MDO.

Oil Type	Component	Volatile (%)	Semi-volatile (%)	Low-volatility (%)	Residual (%)
	Boiling point (°C)	<180 C_4 to C_{10}	180-265 C_{11} to C_{15}	265-380 C_{16} to C_{20}	>380 >C_{20}
MDO	% of total	4.0	32.0	54.0	10.0

7.2 Weathering Properties

7.2.1 MDO

A series of model weathering tests were conducted to illustrate the potential behaviour of the MDO when exposed to idealised and representative environmental conditions:

- A 50 m^3 surface release over 1-hour under calm wind conditions (constant 5 knots), assuming low seasonal water temperature (15°C) and ambient tidal and drift currents.
- A 50 m^3 surface release over 1-hour under variable wind conditions (1-23. knots, drawn from representative data files), assuming low seasonal water temperature (15°C) and ambient tidal and drift currents.

The first case is indicative conditions that would not generate entrainment, while the second case represents conditions that would likely cause entrainment. Both scenarios provide examples of potential behaviour during a spill once the oil is on the sea surface.

The mass balance for the MDO under the constant 5 knot wind case (Figure 7.1) shows that 34.3% of the oil is shown to evaporate within 24 hours. Under calm conditions, the majority of the remaining oil on the water surface will weather at a slower rate due to being comprised of the low volatile, longer-chain compounds. Evaporation shall cease when the residual compounds remain, and they will be subject to more gradual decay through biological and photochemical processes.

Under the variable-wind case (Figure 7.2), where the winds are of greater strength on average, entrainment of MDO into the water column is shown to increase. Approximately 24 hours after the spill, 83.1% of the oil mass is shown to have entrained and a further 11.4% is shown to have evaporated, leaving only a small proportion of the oil floating on the water surface (1.3%).

The increased level of entrainment in the variable-wind case result in a higher percentage decaying at an approximate rate of 3% per day with 22% after 7 days, compared to 0.4% per day and a total of 2.6% after 7 days for the constant-wind case. Given the proportion of entrained oil and the tendency for it to remain mixed in the water column, the remaining hydrocarbons will decay over time scales of several weeks.

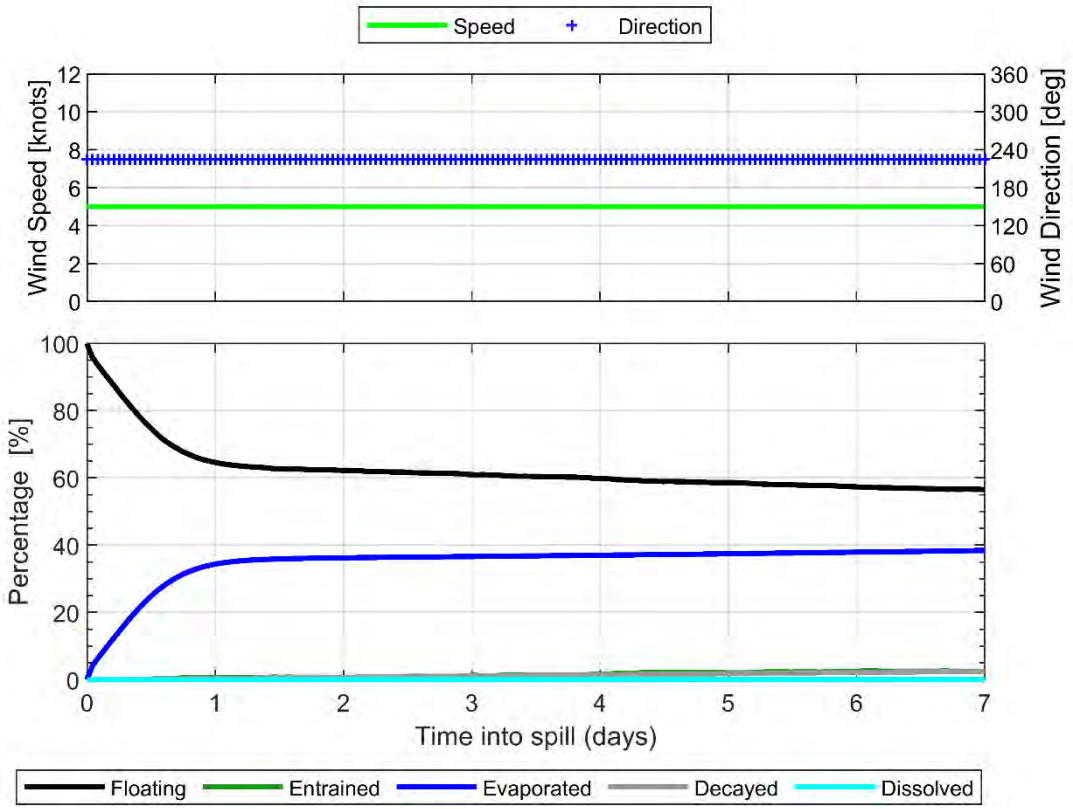

Figure 7.1 Proportional mass balance plot representing the weathering of MDO spilled onto the water surface over 1 hour and subject to a constant 5 knots wind speed at 15°C water temperature.

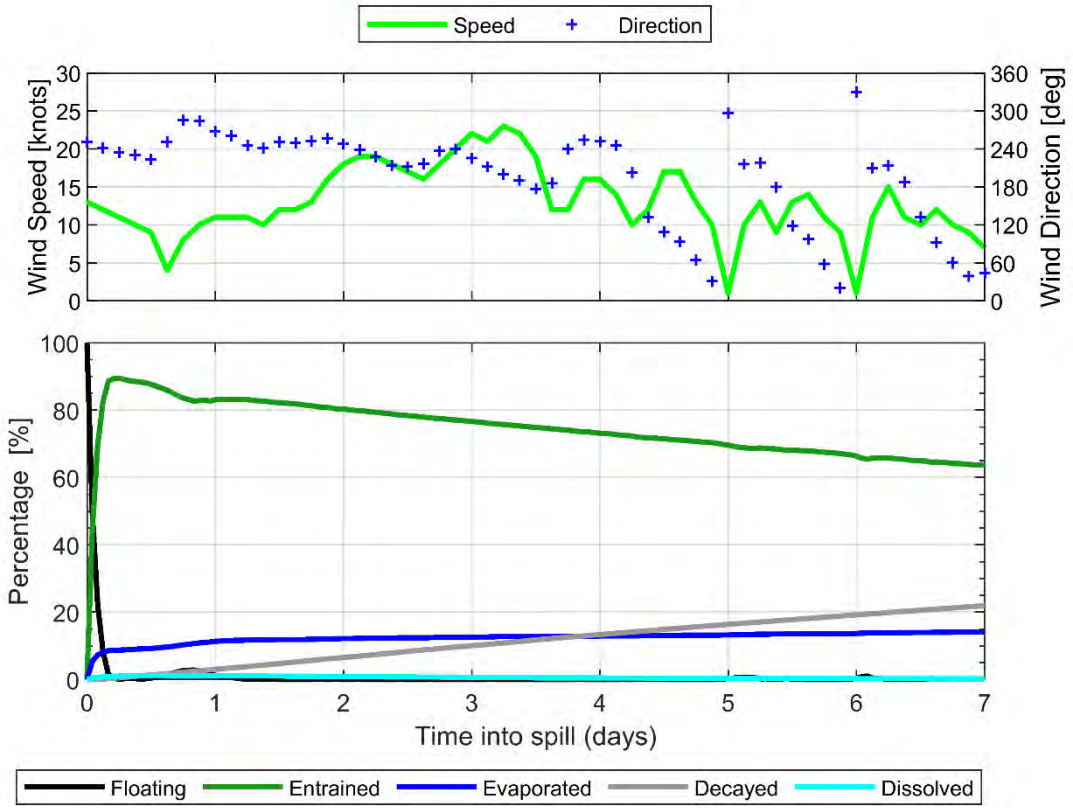

Figure 7.2 Proportional mass balance plot representing the weathering of MDO spilled onto the water over 1 hour and subject to variable wind speeds (1-23 knots) at 15°C water temperature.

8 MODEL SETTINGS

Table 8-1 provides a summary of the oil spill model settings.

Table 8-1 Summary of the oil spill model settings and thresholds used in this assessment.

Parameter	Scenario
Description	Vessel Collision
Number of randomly selected spill start times	100
Model period	Annual
Oil type	MDO
Spill volume	250 m^3
Release type	Surface
Release duration	6 hours
Simulation length (days)	30
Surface oil concentration thresholds (g/m^2) ^	1 (low); 10 (moderate); 50 (high)
Shoreline oil accumulation thresholds (g/m^2) ^	10 (low); 100 (moderate); 1,000 (high)
Dissolved hydrocarbon concentrations (ppb) ^	10 (low); 50 (moderate); 400 (high)
Entrained hydrocarbon concentrations (ppb) ^	10 (low); 100 (high)

^Thresholds based on NOPSEMA (2019)

9 PRESENTATION AND INTERPRETATION OF MODEL RESULTS

The results from the modelling study are presented in a number of tables and figures, which aim to provide an understanding of potential sea-surface and water column exposure and shoreline accumulation.

9.1 Annual Analysis

The statistics are based on the following principles:

- The ***greatest distance travelled by a spill trajectory*** – is determined by a) recording the maximum and b) second greatest distance travelled (or 99th percentile) by a single trajectory, within a scenario, from the release location to the identified exposure thresholds.
- The ***probability of oil exposure to a receptor*** – is determined by recording the number of spill trajectories to reach a specified sea surface or subsea threshold within a receptor polygon, divided by the total number of spill trajectories within that scenario.
- The ***minimum time before oil exposure to a receptor*** – is determined by ranking the elapsed time before sea surface exposure, at a specified threshold, to grid cells within a receptor polygon and recording the minimum value.
- The ***maximum residence time for oil exposure within a receptor*** – is determined by recording the longest continuous length of time a grid cell is exposed to either floating, entrained or dissolved hydrocarbon above each threshold, within a receptor.
- The ***probability of oil accumulation at a receptor*** – is determined by recording the number of spill trajectories to reach a specified shoreline accumulation threshold within a receptor polygon, divided by the total number of spill trajectories within that scenario.
- The ***maximum (total) volume of oil ashore*** – is the total volume of oil stranded on the shorelines throughout the duration of the simulation.
- The ***maximum potential oil loading within a receptor*** – is determined by identifying the maximum loading to any grid cell within a receptor polygon, for a scenario.
- The ***dissolved and entrained hydrocarbon exposure*** – is determined by recording the maximum instantaneous concentrations at each grid cell.

9.2 Deterministic Trajectories

The stochastic modelling results were assessed for each scenario, and the deterministic runs were identified and are presented in the result section based on the following criteria;

a. Largest swept area for surface oil above 10 g/m^2
b. Largest swept area for surface oil above 50 g/m^2
c. Largest (total) volume of oil ashore
d. Longest length of shoreline with oil accumulation above 100 g/m^2
e. Largest area of entrained hydrocarbon exposure above 100 ppb
f. Largest area of dissolved hydrocarbon exposure above 50 ppb

9.3 Receptors Assessed

A range of environmental receptors and shorelines were assessed for floating oil exposure, shoreline accumulation and water column exposure as part of the study (see Figure 9.1 to Figure 9.11). Receptor categories (see Table 9-1) include sections of shorelines which are defined by local government areas (LGAs), sub-LGAs and offshore islands. All other sensitive receptors other than submerged reefs, shoals and banks (RSB) were sourced from Australian Government Department of Climate Change, Energy, the Environment and Water (http://www.environment.gov.au/).

Risks of exposure were separately calculated for each sensitive receptor area and have been tabulated.

Table 9-2 summarises the receptors that the release locations reside within.

Table 9-1 Summary of receptors used to assess floating oil, shoreline and in-water exposure to hydrocarbons.

Receptor Category	Acronym	Hydrocarbon Exposure Assessment			Figure reference
		Water Column	Floating oil	Shoreline	
Australian Marine Park	AMP	✓	✓	×	Figure 9.1
Integrated Marine and Coastal Regionalisation Areas	IMCRA	✓	✓	×	Figure 9.2
Marine National Park	MNP	✓	✓	×	Figure 9.3
Marine Park	MP	✓	✓	×	Figure 9.4
Nature Reserve	NR	✓	✓	×	Figure 9.5
Ramsar	Ramsar	✓	✓	✓	Figure 9.6
Reefs, Shoals and Banks	RSB	✓	✓	×	Figure 9.7
Key Ecological Feature	KEF	✓	✓	×	Figure 9.8
State Waters	State Waters	✓	✓	×	
Local and Sub-Local Government Area	LGA and Sub-LGA	✓ (Reported as: Nearshore Waters)	✓ (Reported as: Nearshore Waters)	✓ (Reported as: Shore)	Figure 9.9 to Figure 9.11

Table 9-2 Summary of the receptors that the release locations reside within.

Acronym	Receptor
BIA	Antipodean Albatross – Foraging
	Black-browed Albatross – Foraging
	Buller's Albatross – Foraging
	Campbell Albatross – Foraging
	Common Diving-petrel – Foraging
	Indian Yellow-nosed Albatross – Foraging
	Pygmy Blue Whale – Distribution
	Pygmy Blue Whale – Foraging (annual high use area)
	Shy Albatross – Foraging
	Wandering Albatross – Foraging
	Wedge-tailed Shearwater – Foraging
	White Shark – Distribution
IMCRA	Otway

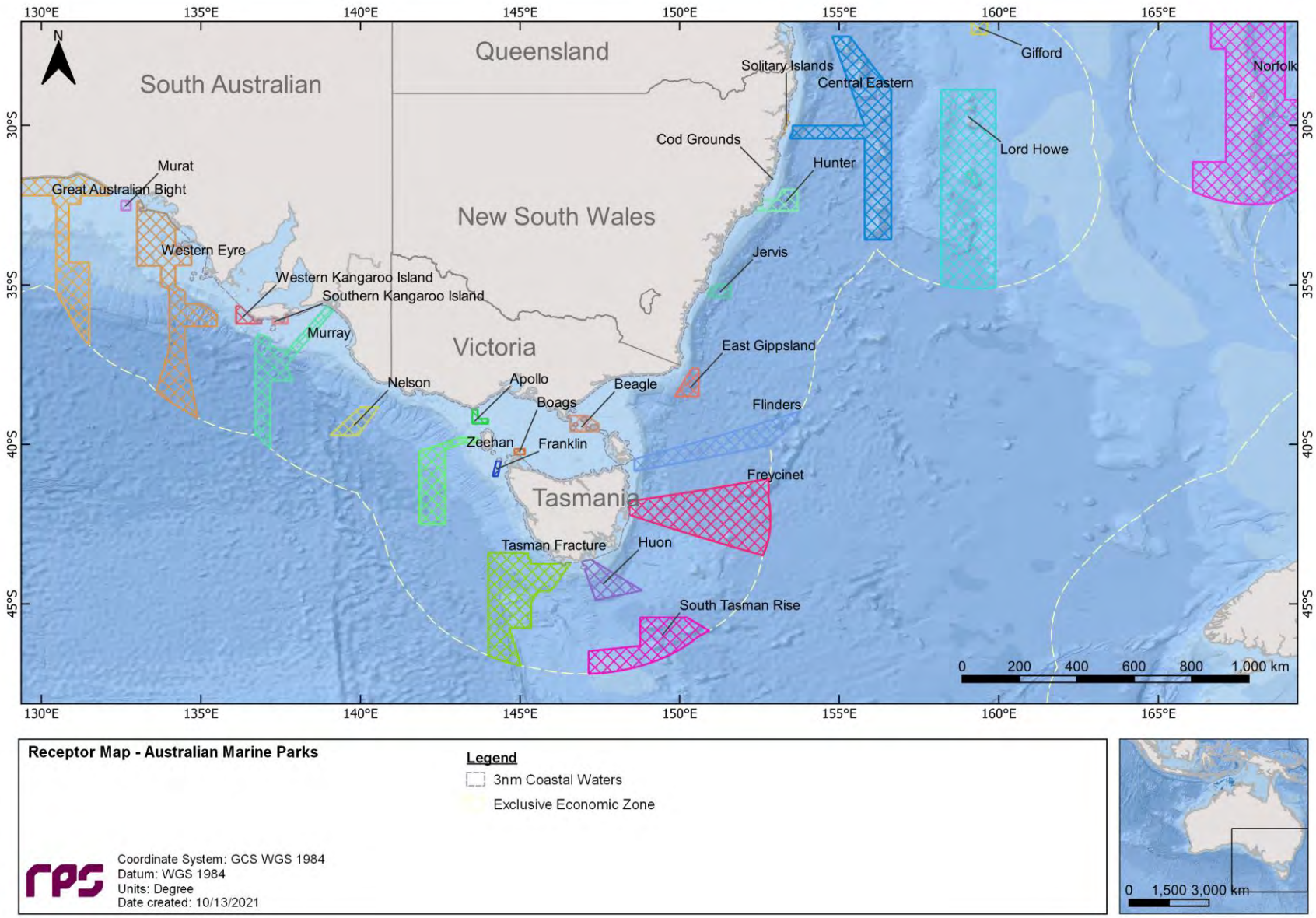

Figure 9.1 Receptor map for Australian Marine Parks (AMP).

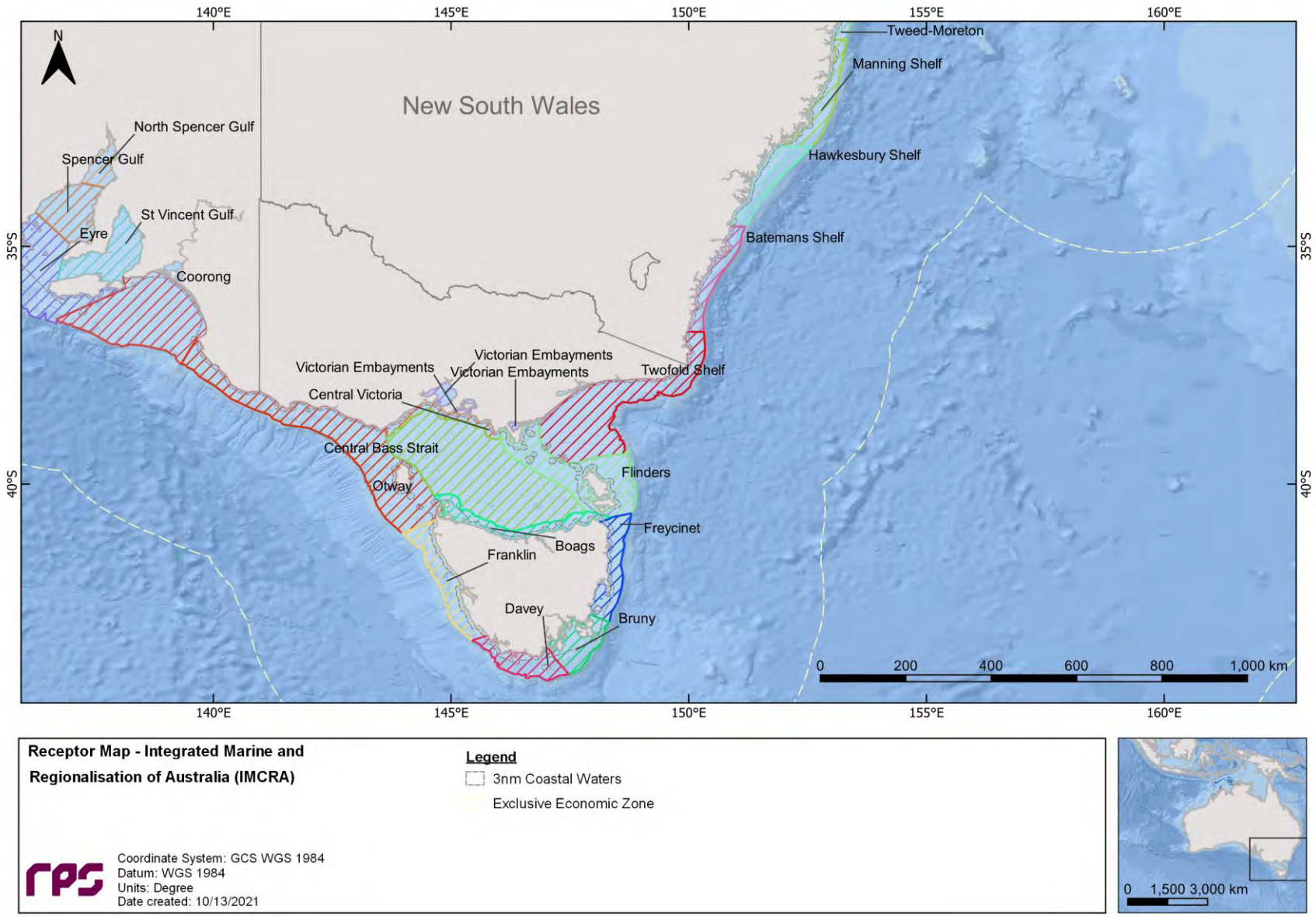

Figure 9.2 Receptor map for integrated marine and coastal regionalisation (IMCRA) areas.

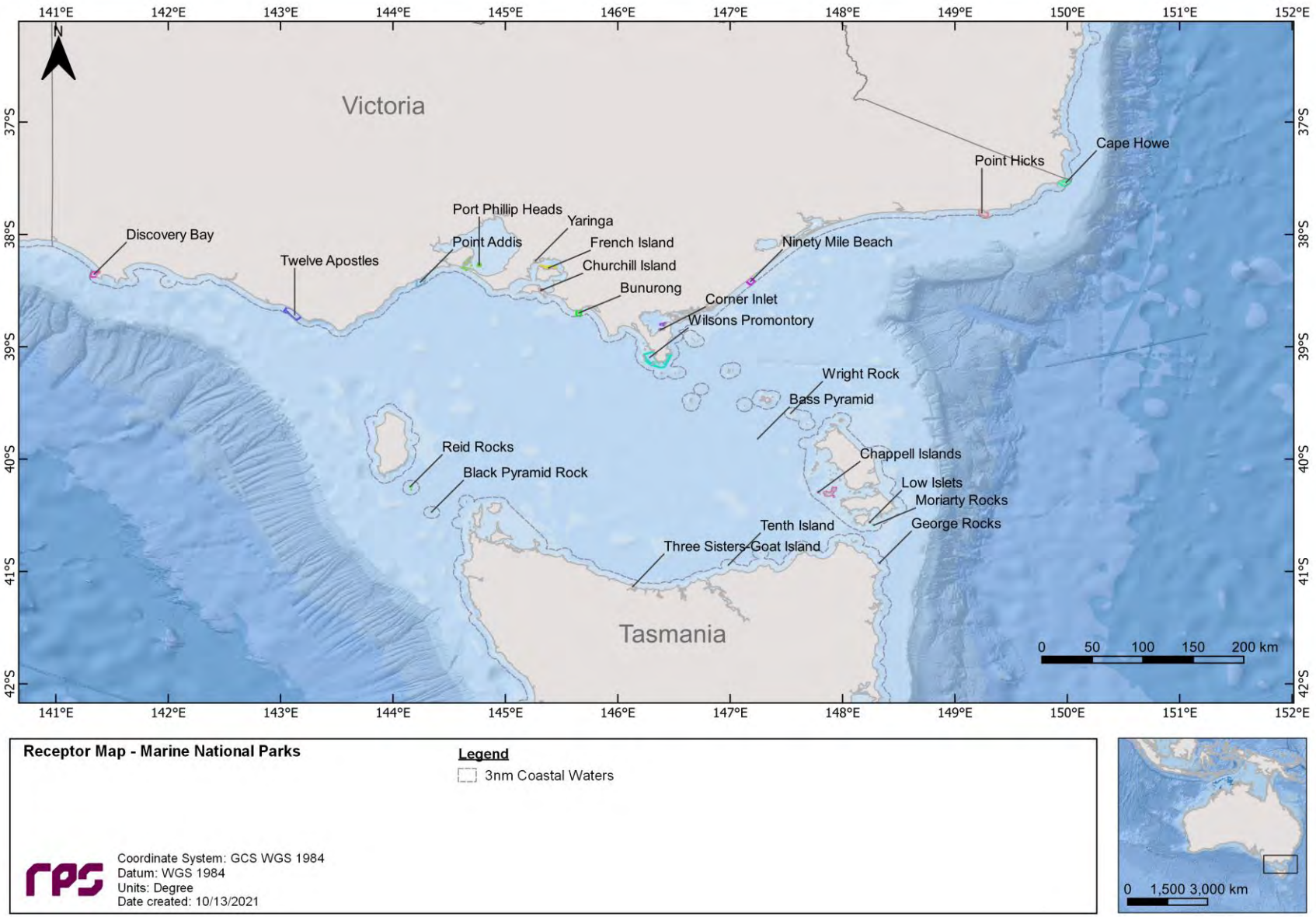

Figure 9.3 Receptor map for Marine National Parks (MNP).

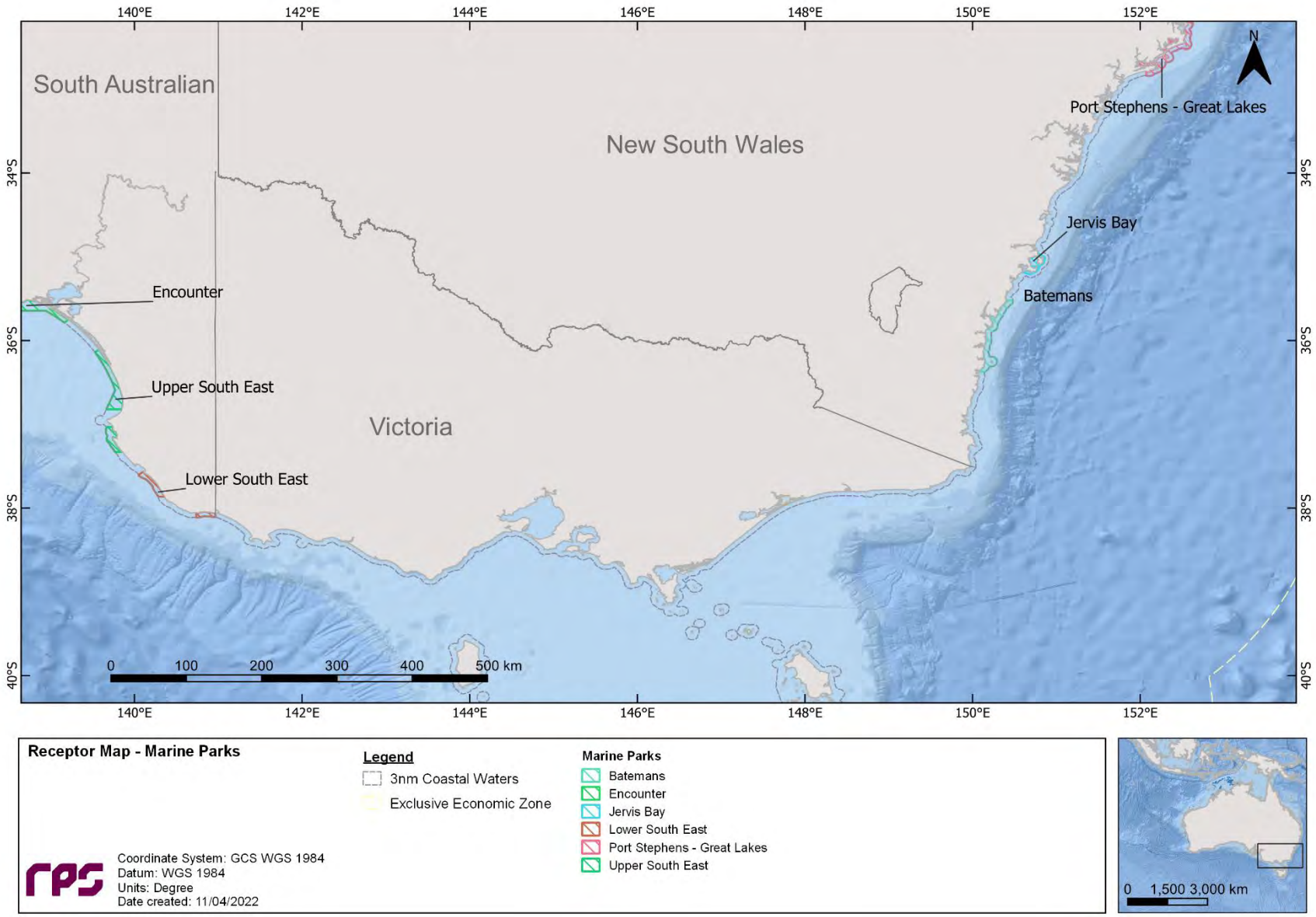

Figure 9.4 Receptor map for Marine Parks (MP).

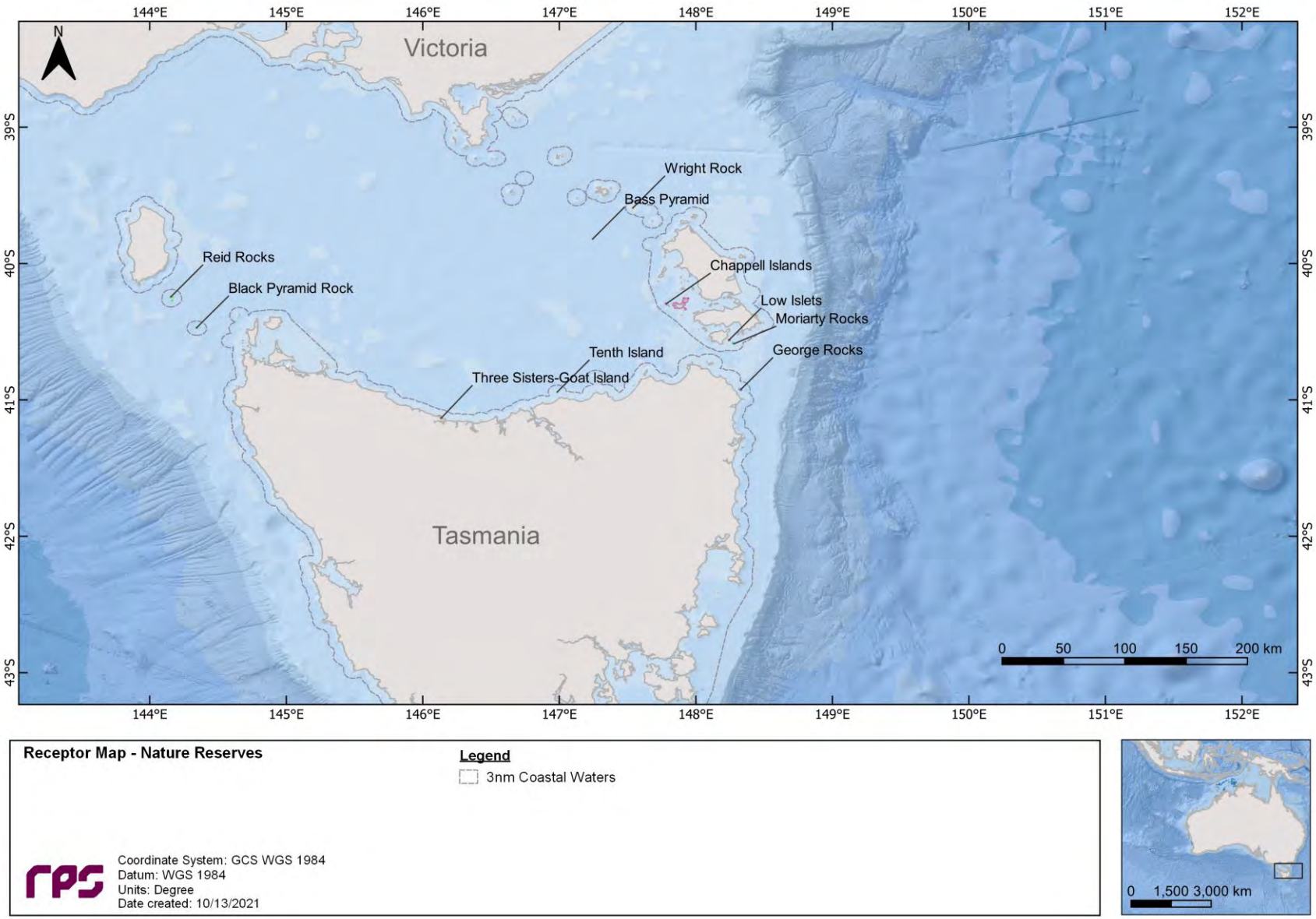

Figure 9.5 Receptor map for Nature Reserves (NR).

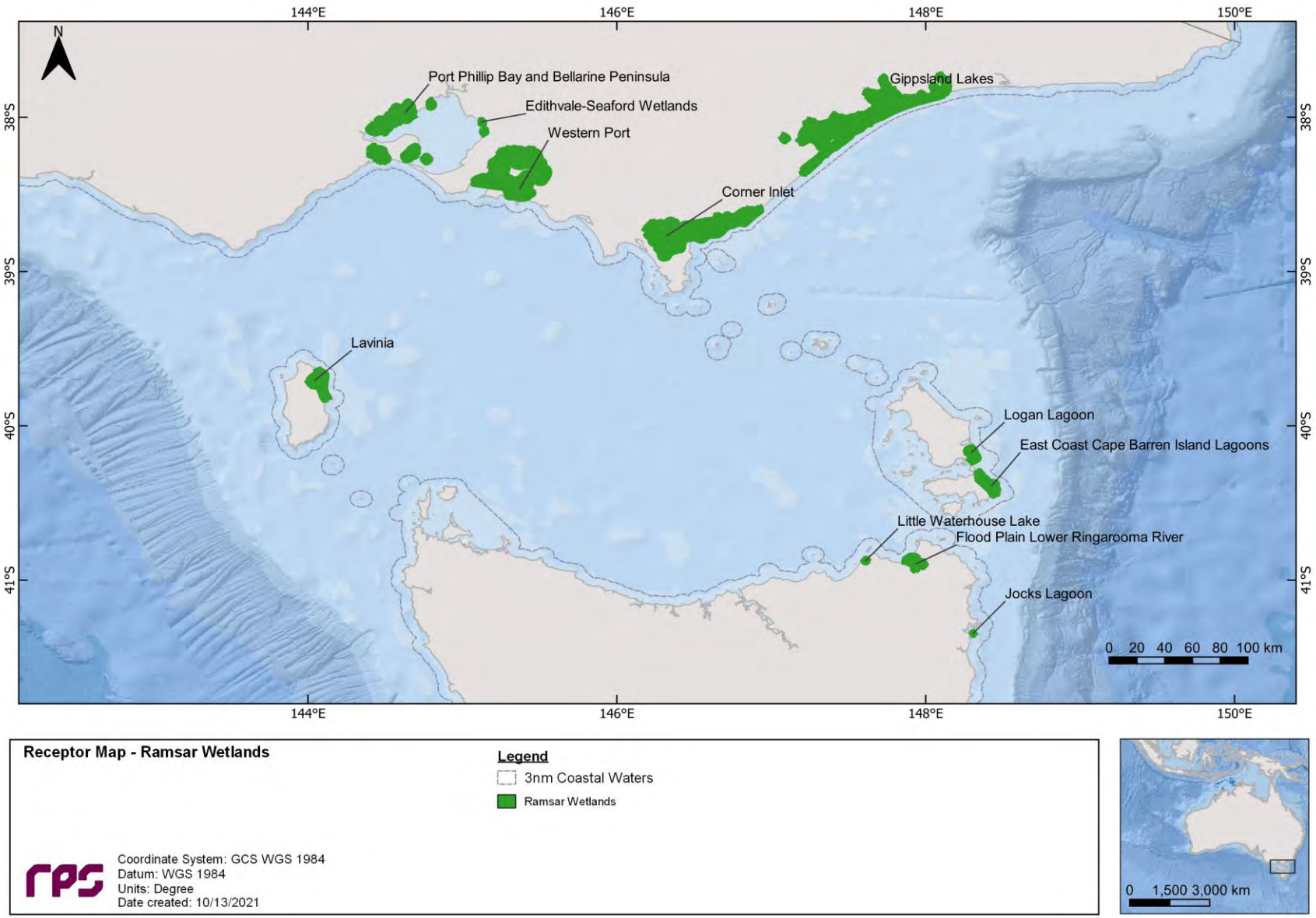

Figure 9.6 Receptor map for Ramsar Sites (Ramsar).

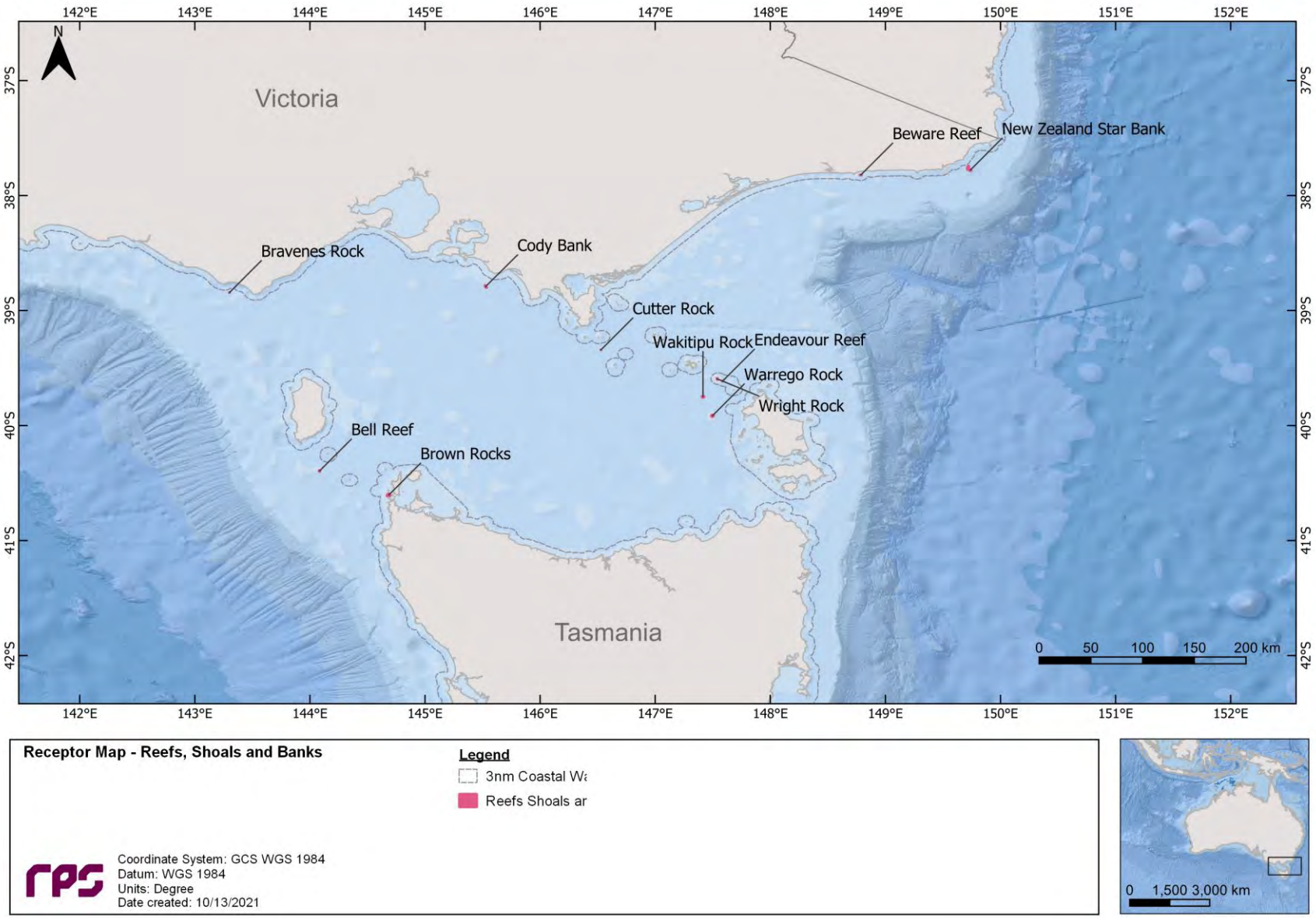

Figure 9.7 Receptor map for Reefs, Shoals and Banks (RSB).

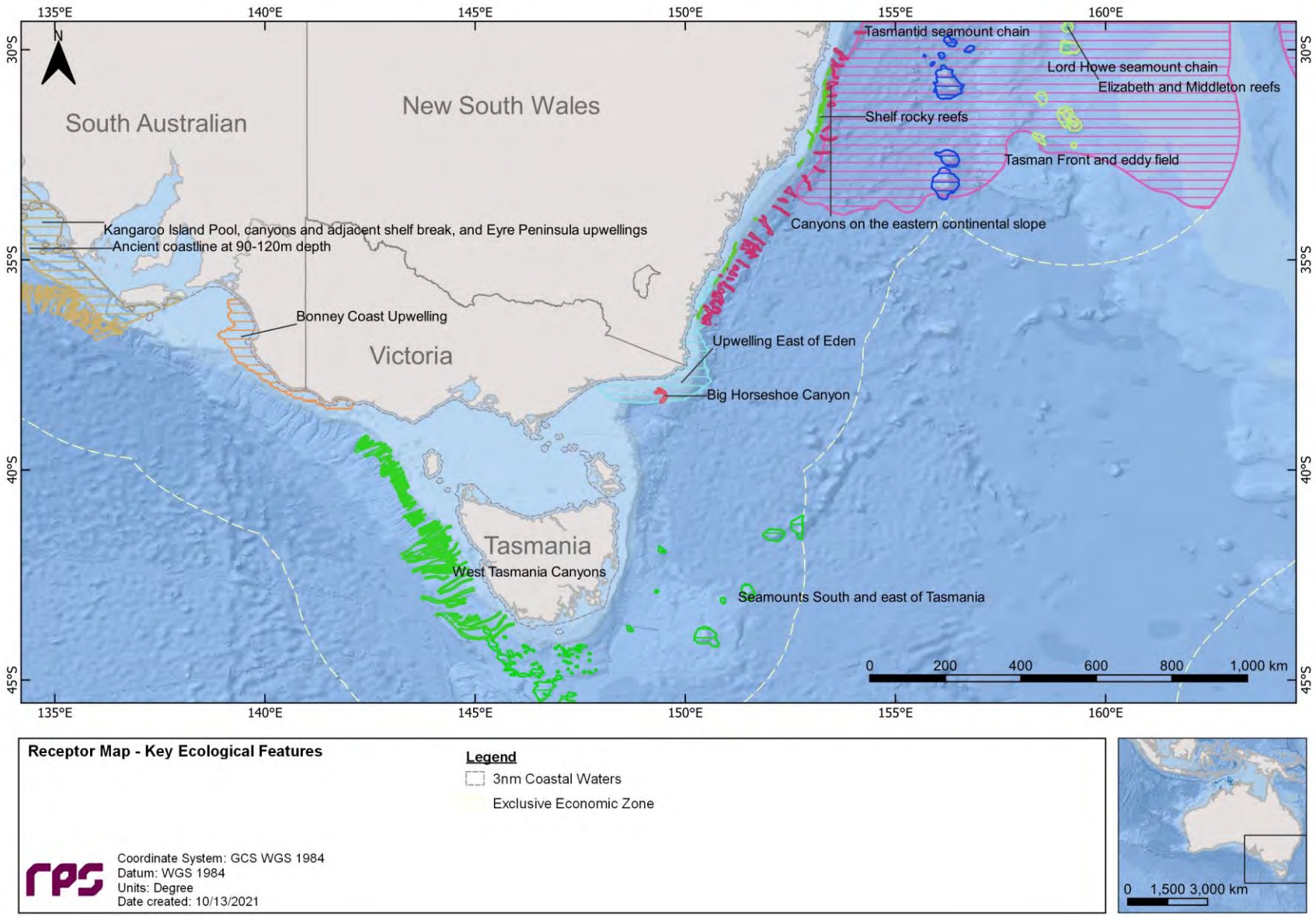

Figure 9.8 Receptor map for Key Ecological Features (KEF).

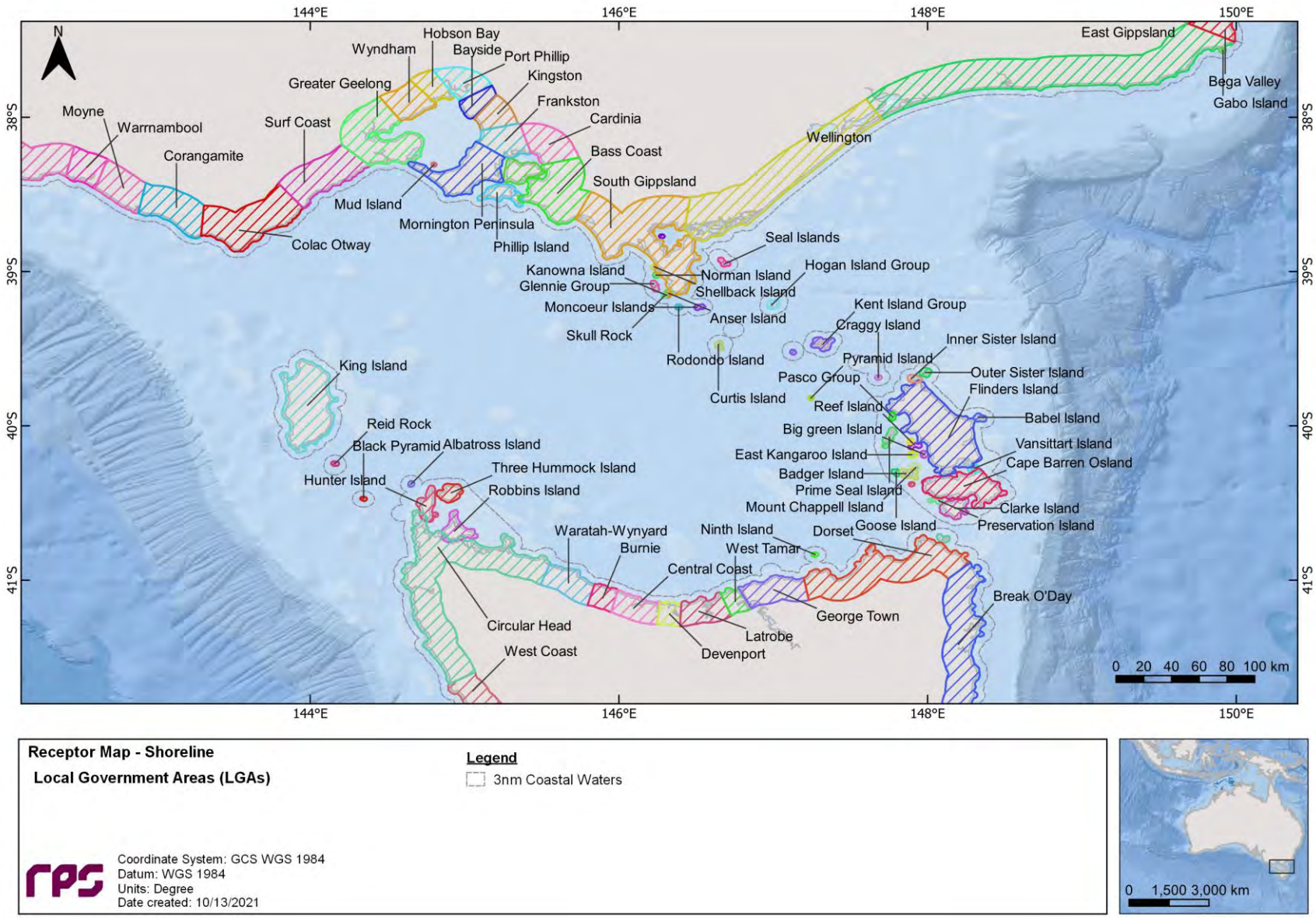

Figure 9.9 Receptor map for shorelines (1 of 3).

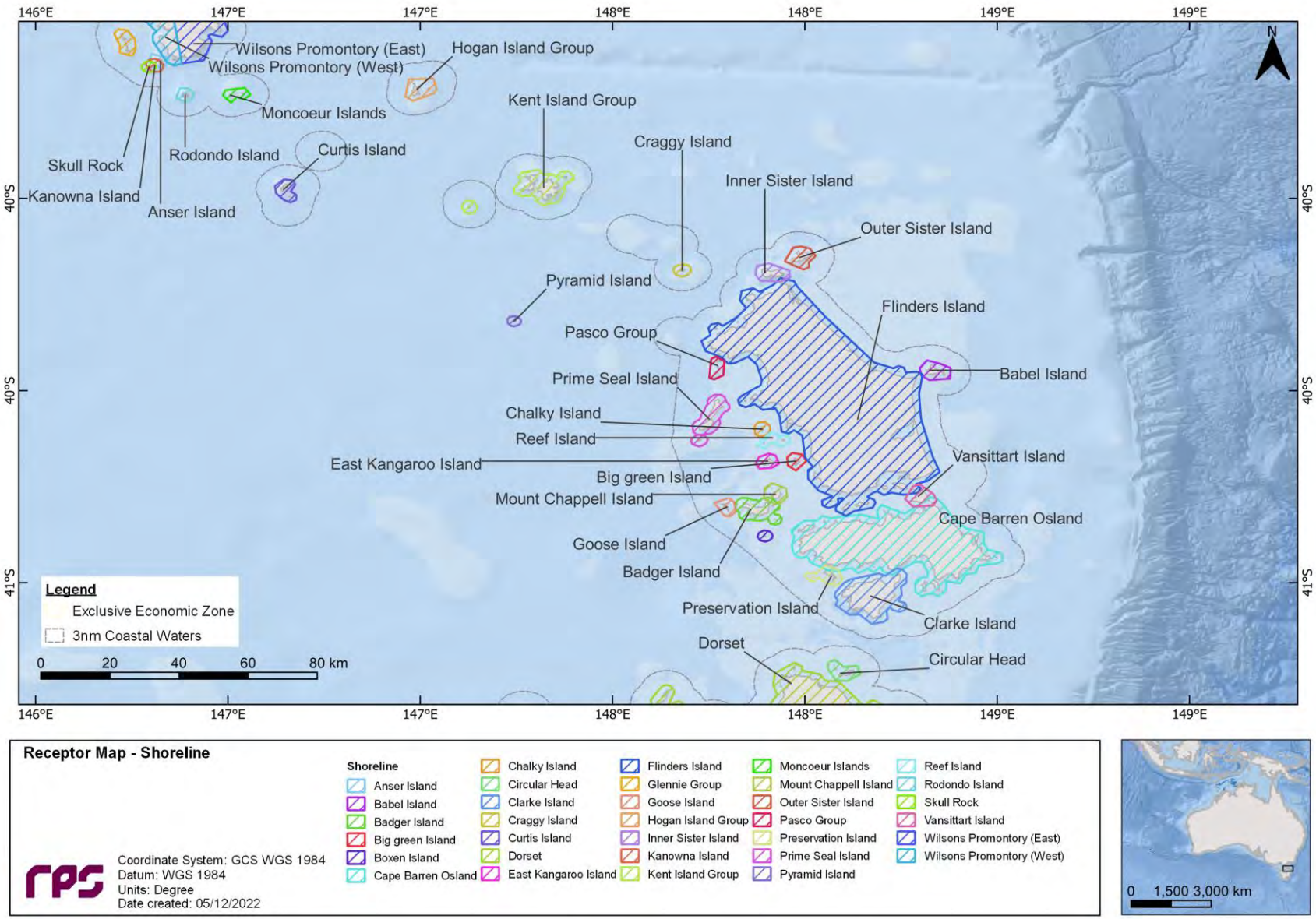

Figure 9.10 Receptor map for shorelines (2 of 3).

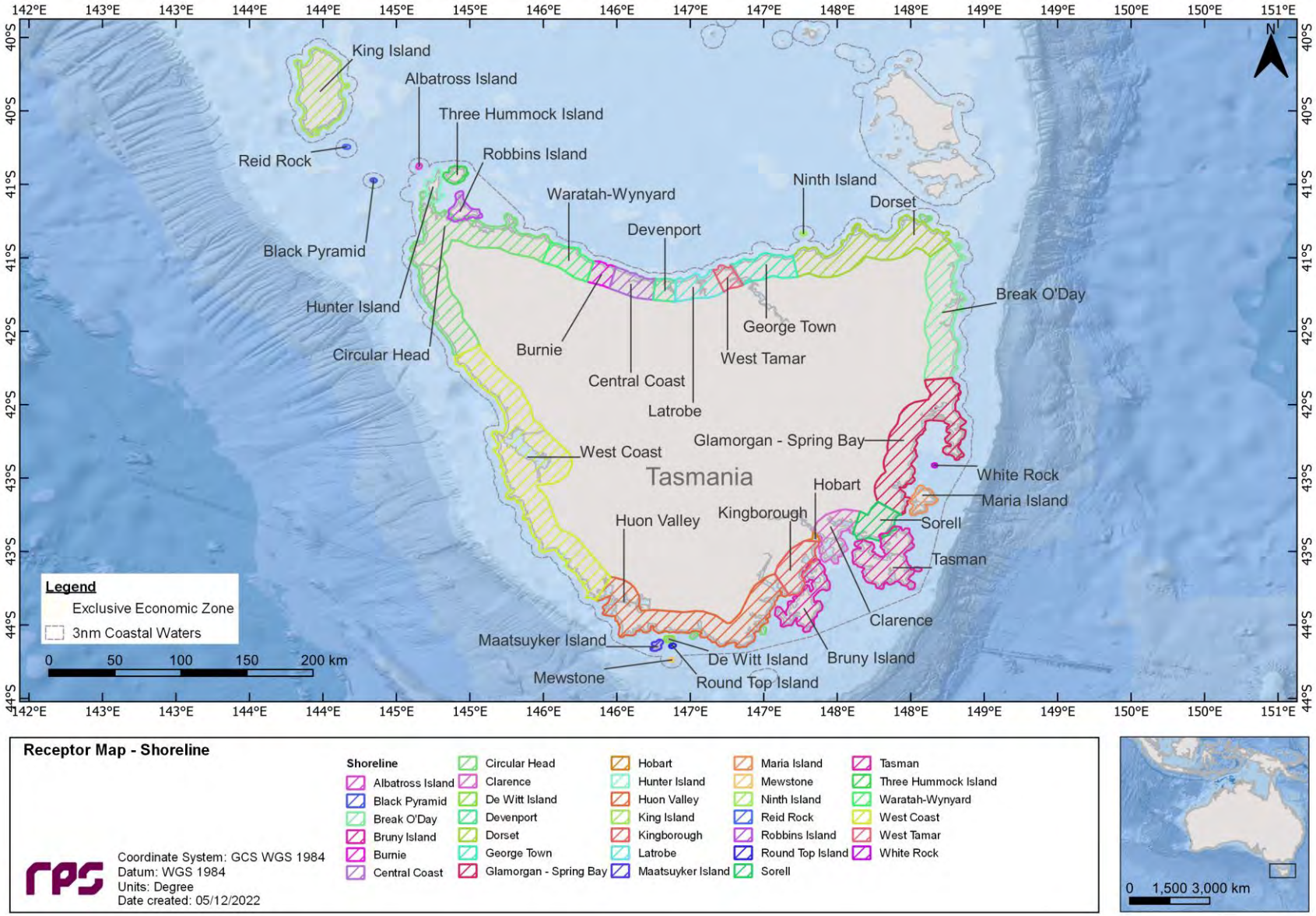

Figure 9.11 Receptor map for shorelines (3 of 3).

10 RESULTS – 250 m³ LOSS OF CONTAINMENT FROM A VESSEL COLLISION

This scenario examined a 250 m^3 surface release of MDO over 6 hours to represent a loss of containment from a vessel collision. A total of 100 spill simulations were run and tracked for 30 days. The results for all 100 simulations were combined and are presented on an annual basis.

Sections 10.1 and 10.2 present the annual stochastic analysis and deterministic analysis results, respectively.

10.1 Stochastic Analysis

10.1.1 Area of Exposure

Figure 10.1 presents the area of exposure based on the low thresholds produced by overlaying the results from all 100 simulations.

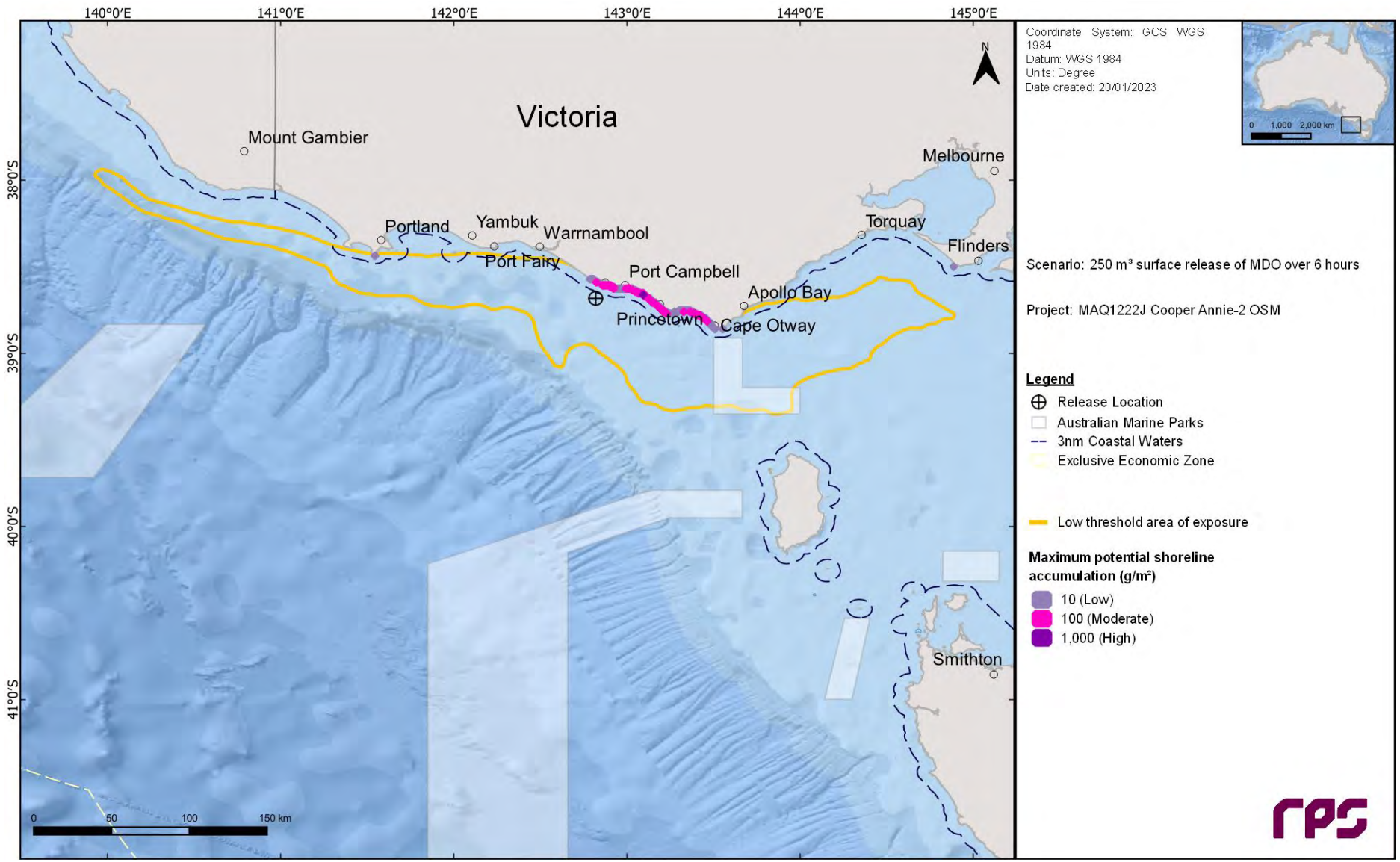

Figure 10.1 Predicted area of exposure for low thresholds produced by overlaying the results from 100 simulations of a 250 m³ surface release of MDO over 6 hours.

10.1.2 Floating Oil Exposure

Table 10-1 summarises the maximum distance travelled by floating oil on the sea surface at each threshold. The maximum distance from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (> 50 g/m^2) exposure zones was 32.5 km (west), 10.3 km (west) and 2.8 km (east-southeast), respectively.

Table 10-2 summarises the potential floating oil exposure to individual receptors.

A total of 14 Biologically Important Areas (BIAs) were predicted to be exposed to floating oil at, or above, the low threshold. Excluding the 13 BIAs that the release location resides within (see Section 9.3), the highest probability (3%) of low exposure were predicted at the Southern Right Whale – Aggregation BIA. The minimum time before low exposure to the Southern Right Whale – Aggregation ranged between 28 hours.

Additionally, Twelve Apostles MNP, Corangamite LGA and Moonlight Head sub-LGA recorded a probability of low floating oil exposure of 2%.

Table 10.3 presents the maximum residence time of floating oil exposure for each individual grid cell within each individual receptor.

Figure 10.2 presents the zones of potential floating oil exposure whilst Figure 10.3 to Figure 10.4 present the maximum residence time of floating oil exposure for the NOPSEMA thresholds.

Table 10-1 Maximum distance and direction from the release location to the edge of floating oil exposure. Results are based on a 250 m^3 surface release of MDO over 6 hours. The results were calculated from 100 spill simulations.

Distance and direction travelled	Zones of potential floating oil exposure		
	Low	Moderate	High
Maximum distance (km) from release location	32.5	10.3	2.8
Maximum distance (km) from release location (99th percentile)	30.3	10.3	2.8
Direction	W	W	ESE

Table 10-2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 250 m^3 surface release of MDO over 6 hours. The results were calculated from 100 spill simulations.

Receptor		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (hours)		
		Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross – Foraging*	100	100	38	1	1	1
	Black-browed Albatross – Foraging*	100	100	38	1	1	1
	Buller's Albatross – Foraging*	100	100	38	1	1	1
	Campbell Albatross – Foraging*	100	100	38	1	1	1
	Common Diving-petrel – Foraging*	100	100	38	1	1	1
	Indian Yellow-nosed Albatross – Foraging*	100	100	38	1	1	1
	Pygmy Blue Whale – Distribution*	4	-	-	23	1	1
	Pygmy Blue Whale – Foraging (annual high use area) *	100	100	38	1	1	1
	Shy Albatross – Foraging*	100	100	38	1	1	1
	Southern Right Whale – Aggregation	4	-	-	23	-	-
	Southern Right Whale – Migration and resting on migration	100	100	38	1	1	1
	Wandering Albatross – Foraging*	100	100	38	1	1	1
	Wedge-tailed Shearwater – Foraging*	100	100	38	1	1	1
	White Shark – Distribution*	100	100	38	1	1	1
IMCRA	Otway*	100	100	38	1	1	1
MNP	Twelve Apostles	2	-	-	32	-	-
Nearshore Waters (LGA)	Corangamite	2	-	-	36	-	-
Nearshore Waters (Sub-LGA)	Moonlight Head	2	-	-	35	-	-
State Waters	Victoria State Waters*	10	2	-	6	16	-

*The release location resides within the receptor boundaries.

Table 10.3 Summary of the maximum residence time of floating oil exposure for each individual grid cell within each individual receptor. Results are based on a 250 m^3 surface release of MDO over 6 hours. The results were calculated from 100 spill simulations.

Receptor		Maximum residence time of floating oil exposure (hours)		
		Low	Moderate	High
BIA	Antipodean Albatross – Foraging*	31.92	18	6.96
	Black-browed Albatross – Foraging*	31.92	18	6.96
	Buller's Albatross – Foraging*	31.92	18	6.96
	Campbell Albatross – Foraging*	31.92	18	6.96
	Common Diving-petrel – Foraging*	31.92	18	6.96
	Indian Yellow-nosed Albatross – Foraging*	31.92	18	6.96
	Pygmy Blue Whale – Distribution*	31.92	18	6.96
	Pygmy Blue Whale – Foraging*	31.92	18	6.96
	Shy Albatross – Foraging*	31.92	18	6.96
	Southern Right Whale - Aggregation	9.12	-	-
	Southern Right Whale – Migration and resting on migration	31.92	18	6.96
	Wandering Albatross – Foraging*	31.92	18	6.96
	Wedge-tailed Shearwater – Foraging*	31.92	18	6.96
	White Shark – Distribution*	31.92	18	6.96
IMCRA	Otway*	31.92	18	6.96
MNP	Twelve Apostles	3.12	-	-
Nearshore Waters (LGA)	Corangamite	3.12	-	-
Nearshore Waters (Sub-LGA)	Moonlight Head	3.12	-	-
State Waters*	Victoria State Waters	19.92	3.12	-

*The release location resides within the receptor boundaries.

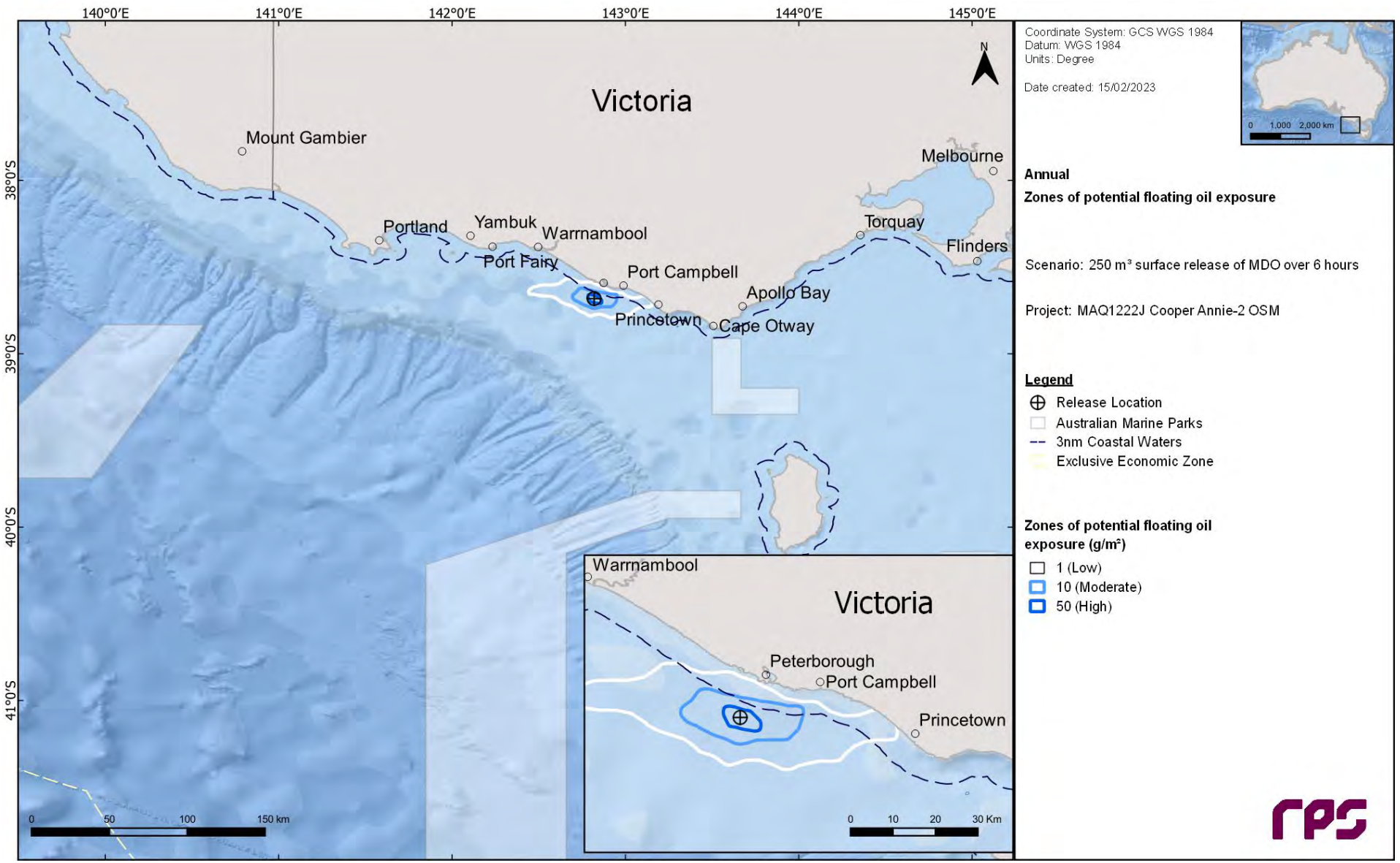

Figure 10.2 Zones of potential floating oil exposure in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

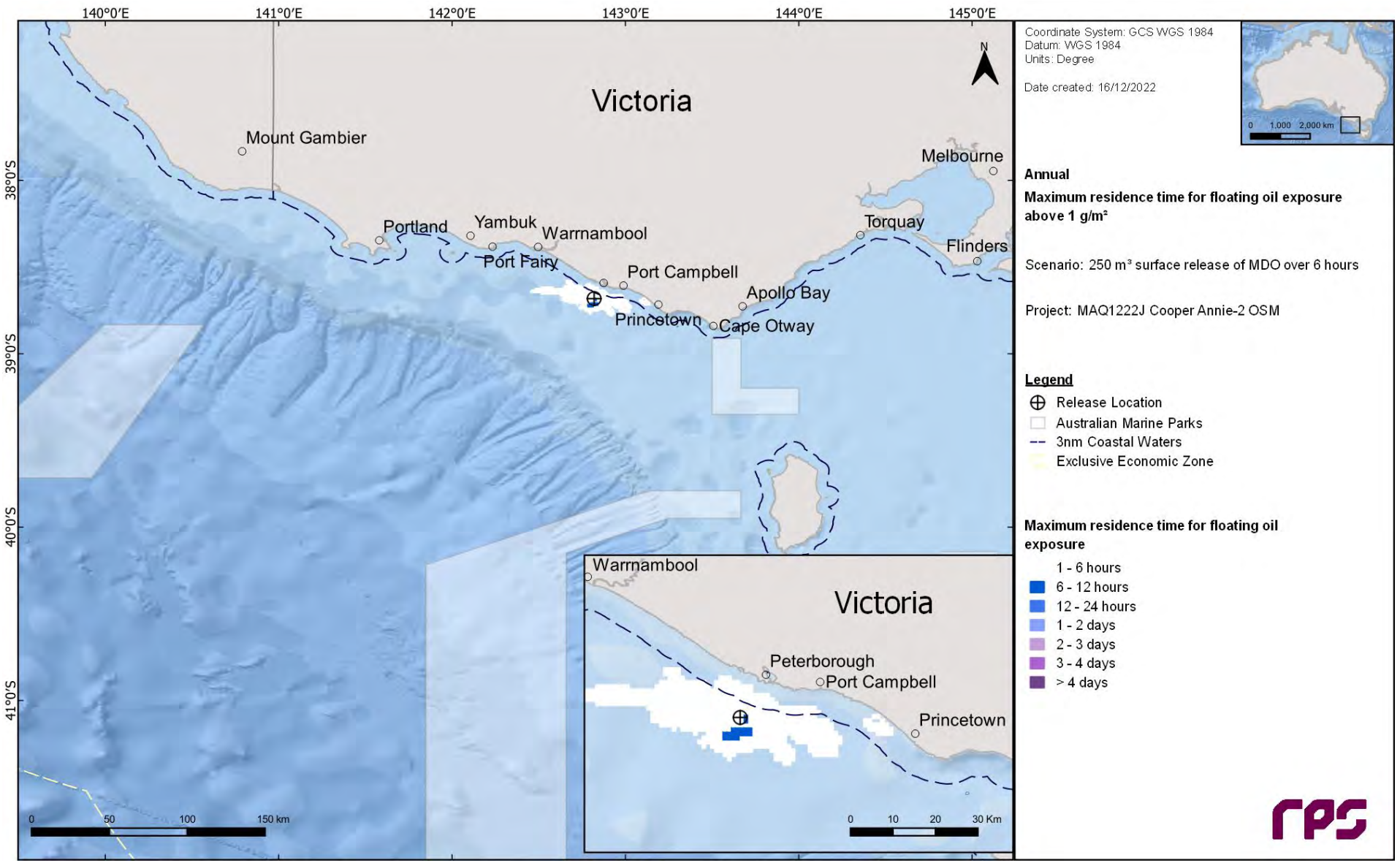

Figure 10.3 Maximum residence time of floating oil exposure above 1 g/m², in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

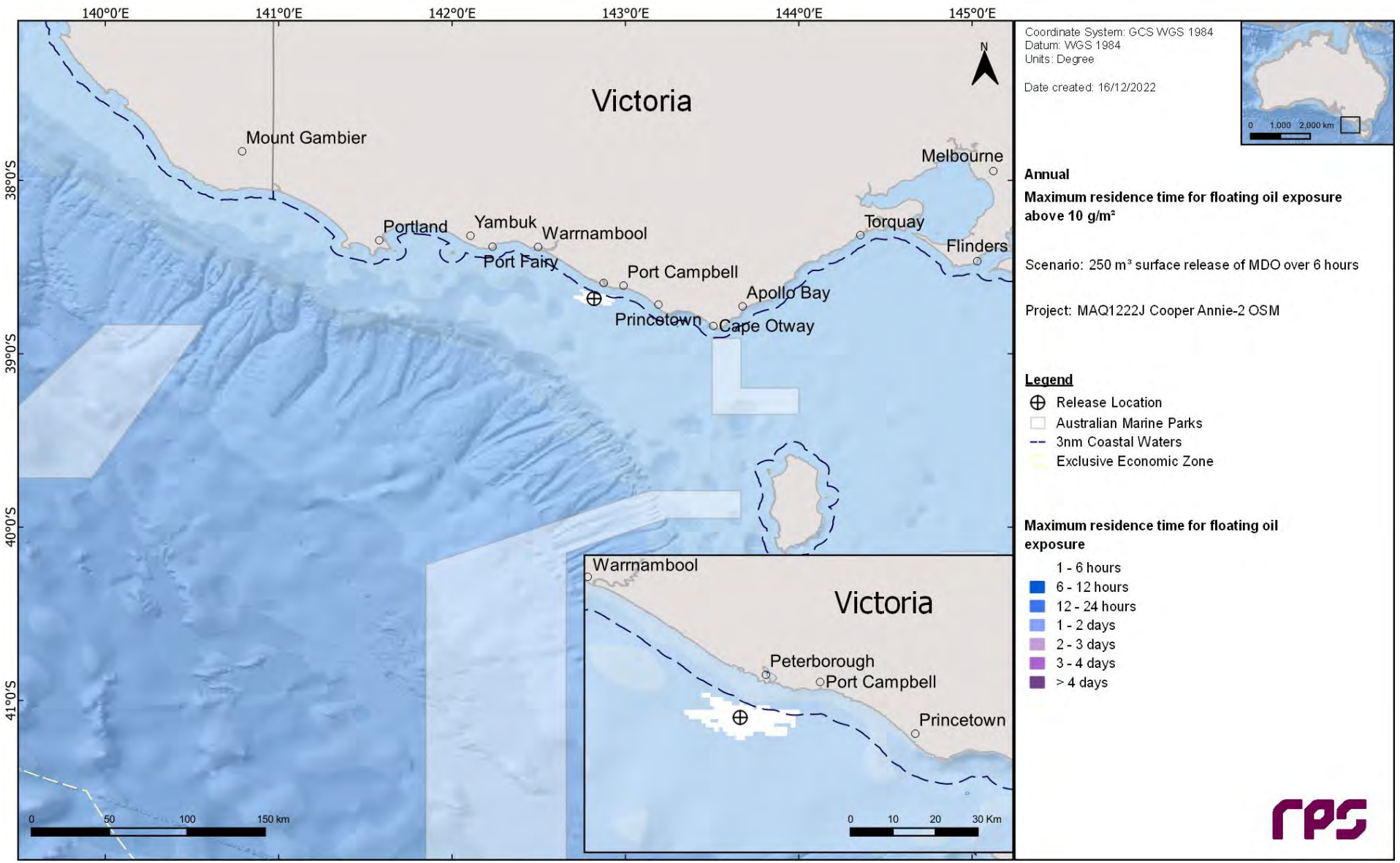

Figure 10.4 Maximum residence time of floating oil exposure above 10 g/m², in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

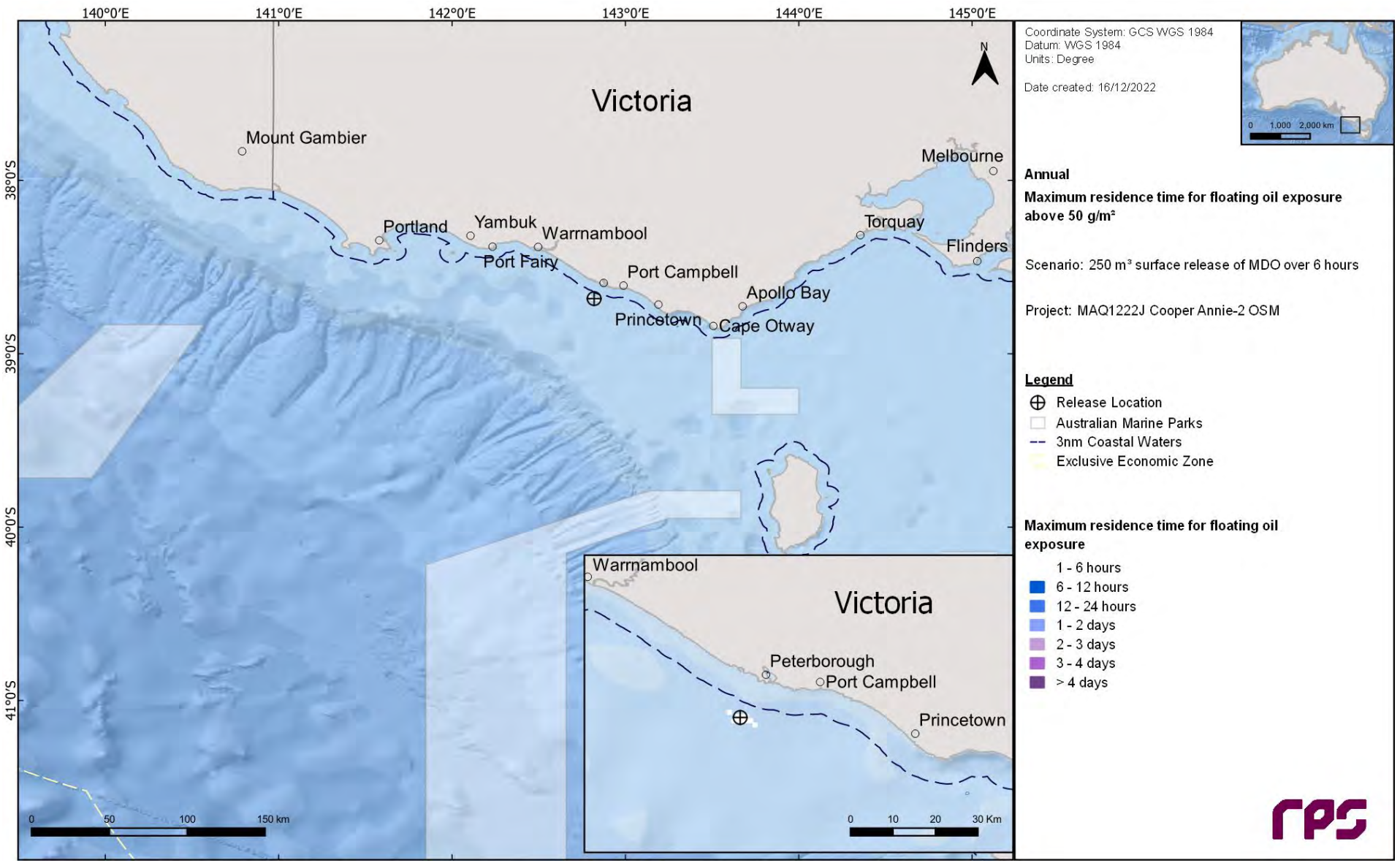

Figure 10.5 Maximum residence time of floating oil exposure above 50 g/m², in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

10.1.3 Shoreline Accumulation

Table 10-4 presents a summary of the potential shoreline accumulation. The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 60%. The minimum time before oil accumulation at, or above, the low threshold was 22 hours. The maximum total volume ashore for a single spill trajectory was 43.2 m^3, and the maximum length of shoreline with accumulation above the low, moderate and high thresholds were 32 km, 11 km and 1 km, respectively.

Table 10-5 summarises the shoreline accumulation on individual receptors.

The shoreline segment of Corangamite had the highest probability of accumulation above all three thresholds. The minimum time for low threshold shoreline accumulation was less than 1 day for several shoreline segments and Sub-LGAs.

The maximum potential shoreline loading above each shoreline thresholds is presented in Figure 10.6.

Table 10-4 Summary of oil accumulation across all shorelines. Results are based on a 250 m^3 surface release of MDO over 6 hours. The results were calculated from 100 spill simulations.

Shoreline Statistics	Annual
Probability of accumulation on any shoreline (%)	60
Absolute minimum time for visible oil to shore (hours)	22
Maximum total volume of hydrocarbons ashore (m^3)	43.2
Average total volume of hydrocarbons ashore (m^3)	7.5
Maximum length of the shoreline at **10 g/m^2** (km)	32
Average shoreline length (km) at **10 g/m^2** (km)	13
Maximum length of the shoreline at **100 g/m^2** (km)	11
Average shoreline length (km) at **100 g/m^2** (km)	4.8
Maximum length of the shoreline at **1,000 g/m^2** (km)	1
Average shoreline length (km) at **1,000 g/m^2** (km)	1

Table 10-5 Summary of oil accumulation on individual shoreline receptors. Results are based on a 250 m^3 surface release of MDO over 6 hours. The results were calculated from 100 spill simulations.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
LGA	Colac Otway	26	5	-	2	3	-	5	272	1.3	25.1	8.1	3.3	-	24.5	7.3	-
	Corangamite	47	28	1	1	1	4	19	1,015	5.4	43.1	10.1	4.3	0.9	24.5	10	0.9
	Glenelg	1	-	-	8	-	-	< 1	13	< 0.1	0.3	0.9	-	-	0.9	-	-
	Mornington Peninsula	1	-	-	13	-	-	< 1	15	< 0.1	0.8	0.9	-	-	0.9	-	-
	Moyne	6	2	-	1	2	-	4	160	0.2	6.8	3.9	2.3	-	8.2	3.6	-
Sub-LGA	Apollo Bay	2	-	-	5	-	-	< 1	33	< 0.1	0.5	0.9	-	-	0.9	-	-
	Bay of Islands	6	2	-	1	2	-	4	160	0.2	6.8	3.9	2.3	-	8.2	3.6	-
	Cape Nelson	1	-	-	8	-	-	< 1	13	< 0.1	0.3	0.9	-	-	0.9	-	-
	Cape Otway West	26	5	-	2	3	-	5	272	1.3	24.8	8	3.3	-	24.5	7.3	-
	Moonlight Head	43	23	-	1	1	-	18	793	4	40.9	8.4	3.9	-	17.3	8.2	-
	Mornington Peninsula (S)	1	-	-	13	-	-	1	15	< 0.1	0.5	0.9	-	-	0.9	-	-
	Port Campbell	16	8	1	1	2	4	16	1,015	1.4	34.7	7.1	3.7	0.9	16.4	7.3	0.9

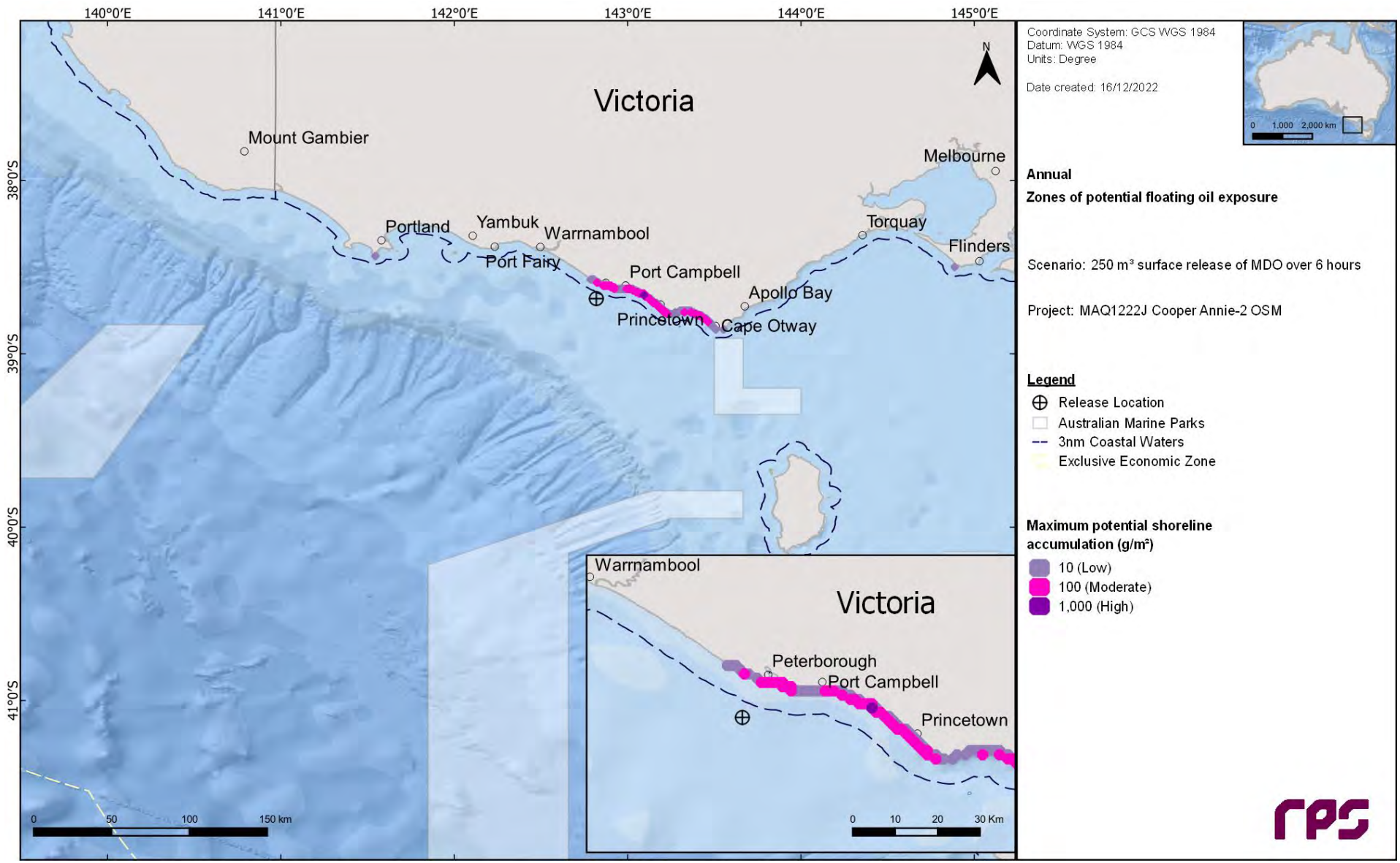

Figure 10.6 Maximum potential shoreline loading in the event of a 250 m^3 of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

10.1.4 In-water exposure

10.1.4.1 Dissolved Hydrocarbons

Table 10-6 summarises the potential in-water exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer.

A total of 15 BIAs were predicted to be exposed to dissolved hydrocarbon at, or above, the low threshold. Excluding the 13 BIAs that the release location resides within (see Section 9.3), the highest probability of low exposure ranged between 1% (Short-tailed Shearwater - Foraging) and 2% (Southern Right Whale - Aggregation).

Additionally, the Twelve Apostles MNP recorded a probability of low dissolved hydrocarbon exposure of 1%.

The maximum dissolved hydrocarbon concentration at any given receptor(s) was shown to be 77 ppb.

Table 10.7 presents the predicted minimum time to dissolved hydrocarbon exposure and maximum residence time for dissolved hydrocarbon exposure to individual receptors, in the 0-10 m depth layer, for all thresholds assessed.

Figure 10.7 presents the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layer whilst Figure 10.8 to Figure 10.9 present the maximum residence time of dissolved hydrocarbon exposure for the NOPSEMA thresholds.

Table 10-6 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days. The results were calculated from 100 spill simulations.

Receptor		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure		
			Low	Moderate	High
BIA	Antipodean Albatross – Foraging*	77	29	3	-
	Black-browed Albatross – Foraging*	77	29	3	-
	Buller's Albatross – Foraging*	77	29	3	-
	Campbell Albatross – Foraging*	77	29	3	-
	Common Diving-petrel – Foraging*	77	29	3	-
	Indian Yellow-nosed Albatross – Foraging*	77	29	3	-
	Pygmy Blue Whale – Distribution *	77	29	3	-
	Pygmy Blue Whale – Foraging	20	1	-	-
	Pygmy Blue Whale – Foraging (annual high use area) *	77	29	3	-
	Short-tailed Shearwater - Foraging	12	1	-	-
	Shy Albatross – Foraging*	77	29	3	-
	Southern Right Whale – Aggregation	18	2	-	-
	Southern Right Whale – Migration and resting on migration	77	29	3	-
	Wandering Albatross – Foraging*	77	29	3	-
	Wedge-tailed Shearwater – Foraging*	77	29	3	-
	White Shark – Distribution*	77	29	3	-
IMCRA	Otway*	77	29	3	-
MNP	Twelve Apostles	12	1	-	-
State Waters	Victoria State Waters*	18	2	-	-

*The release location resides within the receptor boundaries.

Table 10.7 Predicted minimum time to dissolved hydrocarbon exposure and maximum residence time for dissolved hydrocarbon exposure to individual receptors in the 0-10 m depth layer. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days. The results were calculated from 100 spill simulations.

Receptor		Minimum time before dissolved hydrocarbon exposure (hours)			Maximum residence time for dissolved hydrocarbon exposure (hours)		
		Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross – Foraging*	2	5	-	16	3	-
	Black-browed Albatross – Foraging*	2	5	-	16	3	-
	Buller's Albatross – Foraging*	2	5	-	16	3	-
	Campbell Albatross – Foraging*	2	5	-	16	3	-
	Common Diving-petrel – Foraging*	2	5	-	16	3	-
	Indian Yellow-nosed Albatross – Foraging*	2	5	-	16	3	-
	Pygmy Blue Whale – Distribution *	2	5	-	16	3	-
	Pygmy Blue Whale – Foraging	39	-	-	1	-	-
	Pygmy Blue Whale – Foraging (annual high use area) *	2	5	-	16	3	-
	Short-tailed Shearwater - Foraging	39	-	-	1	-	-
	Shy Albatross – Foraging*	2	5	-	16	3	-
	Southern Right Whale – Aggregation	34	-	-	16	3	-
	Southern Right Whale – Migration and resting on migration	2	5	-	16	3	-
	Wandering Albatross – Foraging*	2	5	-	16	3	-
	Wedge-tailed Shearwater – Foraging*	2	5	-	16	3	-
	White Shark – Distribution*	2	5	-	16	3	-
IMCRA	Otway*	2	5	-	16	3	-
MNP	Twelve Apostles	34	-	-	1	-	-
State Waters	Victoria State Waters*	18	-	-	2	-	-

*The release location resides within the receptor boundaries.

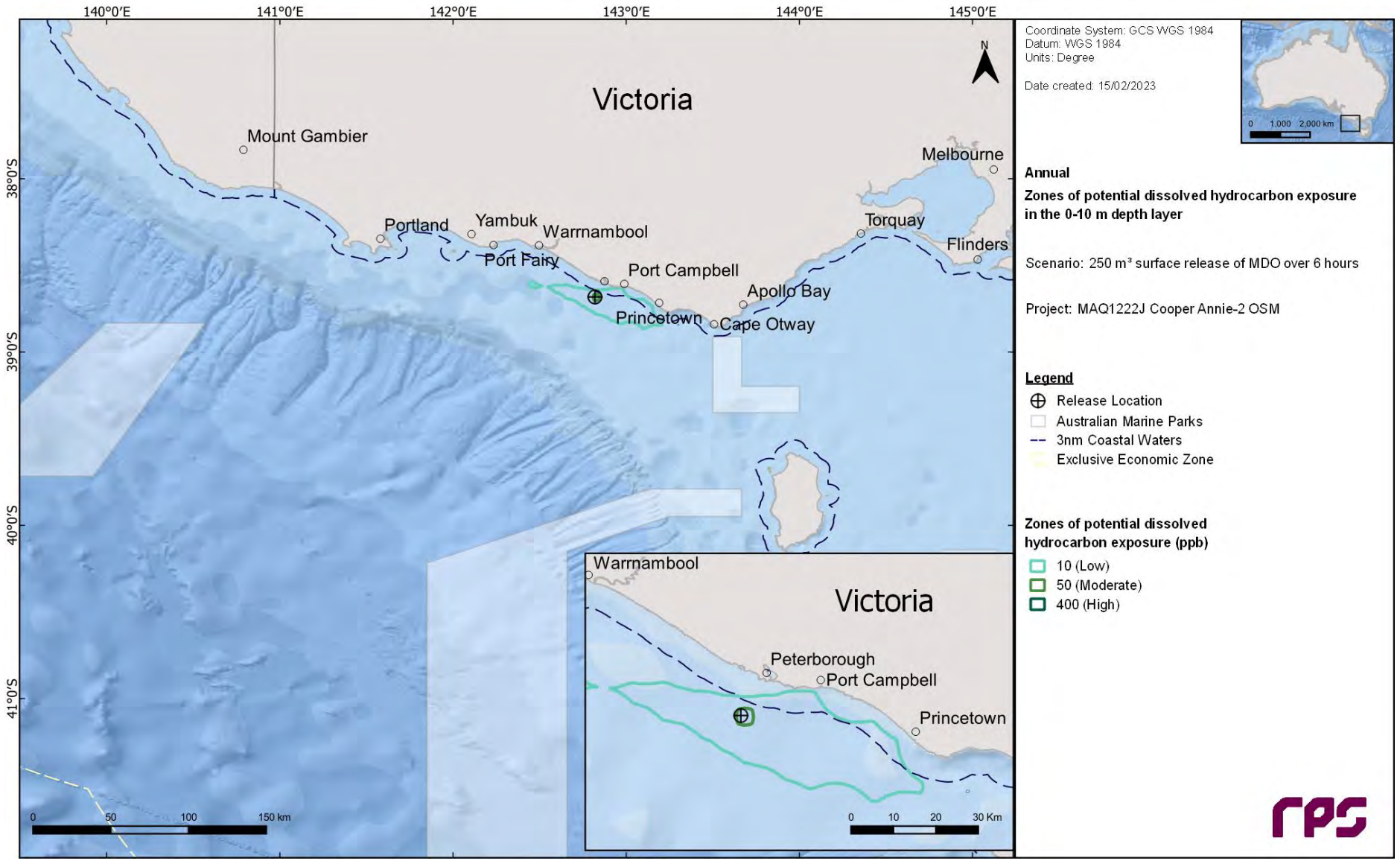

Figure 10.7 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

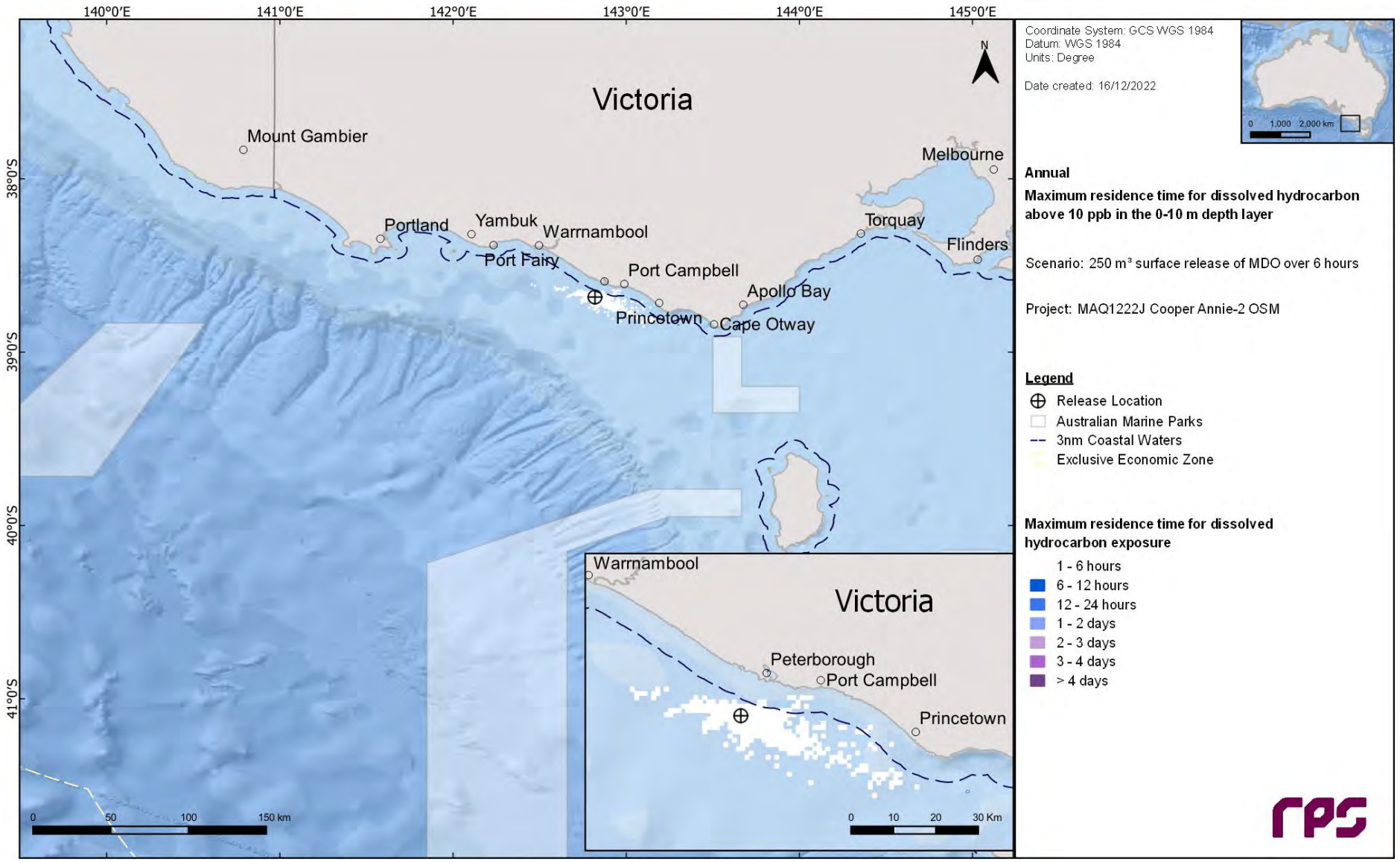

Figure 10.8 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

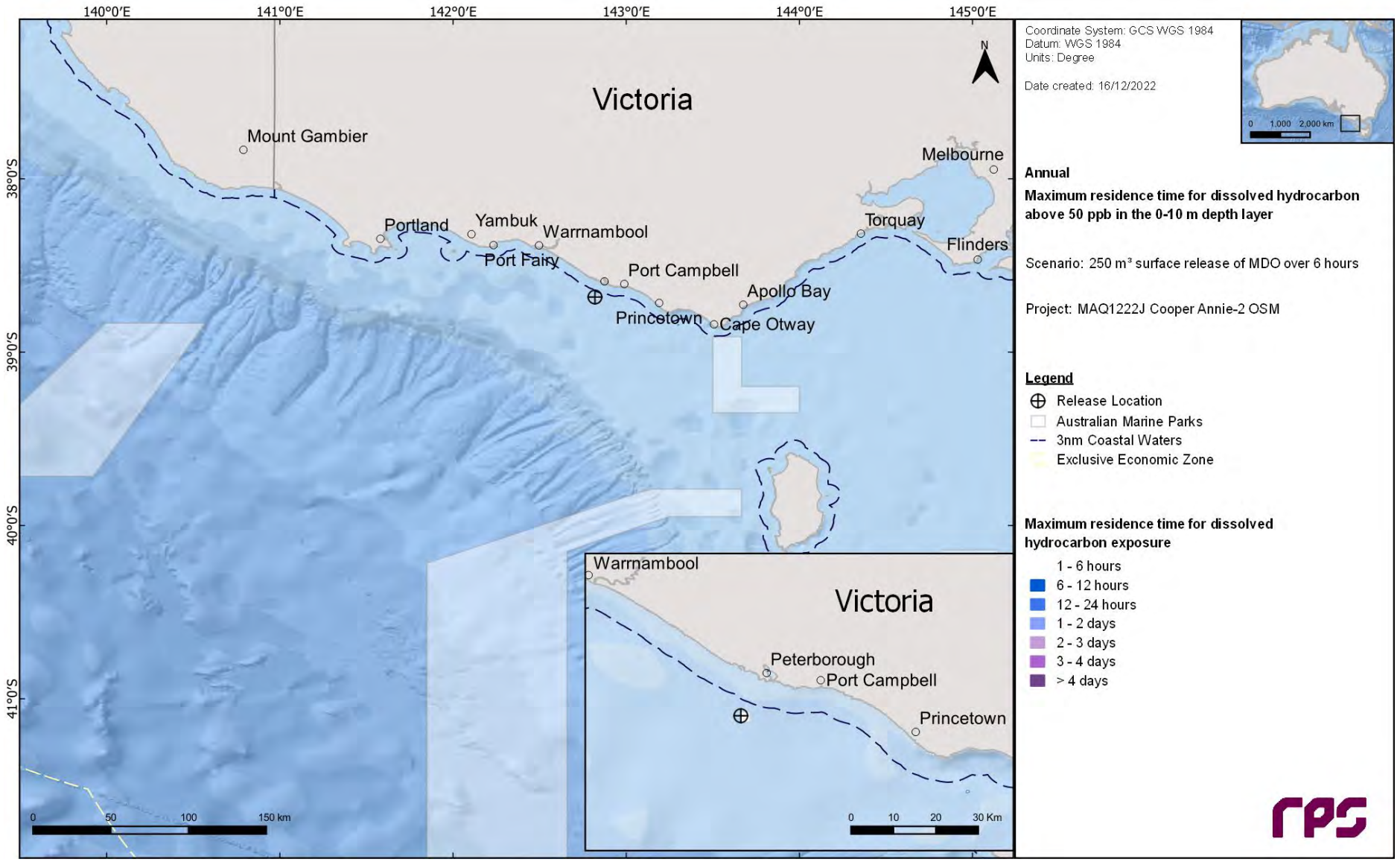

Figure 10.9 Maximum residence time for dissolved hydrocarbon exposure above 50 ppb, at 0-10 m below the sea surface in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

10.1.4.2 Entrained Hydrocarbons

Table 10-8 summarises the potential in-water exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer.

Many receptors were exposed above the low and high thresholds, however the majority of these receptors coincided with the release location.

The highest probability of low entrained hydrocarbon exposure was recorded for the Twelve Apostles MNP (65%) and Short-tailed Shearwater – Foraging BIA (64%). Additional receptors including LGAs, sub-LGAs, and AMPs were predicted with entrained hydrocarbon exposure (refer to Table 10-8).

Table 10.9 presents the predicted minimum time to entrained hydrocarbon exposure and maximum residence time for entrained hydrocarbon exposure to individual receptors in the 0-10 m depth layer, for all thresholds assessed.

Figure 10.10 presents the zones of potential entrained hydrocarbon exposure for the 0-10 m depth layer whilst Figure 10.11 and Figure 10.12 present the maximum residence time of entrained hydrocarbon exposure for the NOPSEMA thresholds.

Table 10-8 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 250 m^3 surface release of MDO over 6 hours. The results were calculated from 100 spill simulations.

Receptor		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High
AMP	Apollo	80	25	-
BIA	Antipodean Albatross – Foraging*	5,819	94	75
	Australasian Gannet - Foraging	56	9	-
	Black-browed Albatross – Foraging*	5,819	94	75
	Buller's Albatross – Foraging*	5,819	94	75
	Campbell Albatross – Foraging*	5,819	94	75
	Common Diving-petrel – Foraging*	5,819	94	75
	Indian Yellow-nosed Albatross – Foraging*	5,819	94	75
	Pygmy Blue Whale – Distribution *	5,819	94	75
	Pygmy Blue Whale – Foraging	666	68	21
	Pygmy Blue Whale – Foraging (annual high use area) *	5,819	94	75
	Short-tailed Shearwater - Foraging	463	64	15
	Shy Albatross – Foraging*	5,819	94	75
	Southern Right Whale – Aggregation	644	20	11
	Southern Right Whale – Migration and resting on migration	5,819	94	75
	Wandering Albatross – Foraging*	5,819	94	75
	Wedge-tailed Shearwater – Foraging*	5,819	94	75
	White Shark – Distribution*	5,819	94	75
	White Shark - Foraging	109	12	1
	White-faced Storm-petrel - Foraging	101	25	1
IMCRA	Central Bass Strait	55	12	-
	Central Victoria	95	25	-
	Otway*	5,819	94	75
KEF	Bonney Coast Upwelling	55	8	-
MNP	Twelve Apostles	843	65	29
RSB	Bravenes Rock	162	40	2
Nearshore Waters (LGA)	Colac Otway	326	41	5
	Corangamite	685	61	18

Receptor		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	
			Low	High
	Glenelg	14	1	-
	Moyne	282	14	3
Nearshore Waters (Sub-LGA)	Apollo Bay	76	17	-
	Bay of Islands	282	14	3
	Cape Nelson	14	1	-
	Cape Otway West	324	41	5
	Childers Cove	12	1	-
	Moonlight Head	666	61	18
	Port Campbell	685	38	10
State Waters	Victoria State Waters*	2,164	68	30

*The release location resides within the receptor boundaries.

Table 10.9 Predicted minimum time to entrained hydrocarbon exposure and maximum residence time for entrained hydrocarbon exposure to individual receptors in the 0-10 m depth layer. Results are based on a 250 m^3 surface release of MDO over 6 hours. The results were calculated from 100 spill simulations.

Receptor		Minimum time before entrained hydrocarbon exposure (hours)		Maximum residence time for entrained hydrocarbon exposure (hours)	
		Low	High	Low	High
AMP	Apollo	50	-	67	-
BIA	Antipodean Albatross – Foraging*	1	1	333	86
	Australasian Gannet - Foraging	92	-	67	-
	Black-browed Albatross – Foraging*	1	1	333	86
	Buller's Albatross – Foraging*	1	1	354	86
	Campbell Albatross – Foraging*	1	1	333	86
	Common Diving-petrel – Foraging*	1	1	420	117
	Indian Yellow-nosed Albatross – Foraging*	1	1	333	86
	Pygmy Blue Whale – Distribution *	1	1	420	117
	Pygmy Blue Whale – Foraging	14	15	388	117
	Pygmy Blue Whale – Foraging (annual high use area) *	1	1	420	117
	Pygmy Blue Whale – Known Foraging Area	59	60	106	1
	Short-tailed Shearwater - Foraging	16	17	420	68
	Shy Albatross – Foraging*	1	1	420	117
	Southern Right Whale – Aggregation	13	15	388	117
	Southern Right Whale – Migration and resting on migration	1	1	420	117
	Wandering Albatross – Foraging*	1	1	333	86
	Wedge-tailed Shearwater – Foraging*	1	1	420	117
	White Shark – Distribution*	1	1	333	86
	White Shark - Foraging	59	78	120	5
	White-faced Storm-petrel - Foraging	60	61	106	1
IMCRA	Central Bass Strait	82	-	106	-
	Central Victoria	60	-	64	-
	Otway*	1	1	420	117
KEF	Bonney Coast Upwelling	89	-	71	-
MNP	Twelve Apostles	11	13	388	110

Receptor		Minimum time before entrained hydrocarbon exposure (hours)		Maximum residence time for entrained hydrocarbon exposure (hours)	
		Low	High	Low	High
RSB	Bravenes Rock	27	47	144	9
Nearshore Waters (LGA)	Colac Otway	23	38	420	67
	Corangamite	13	17	388	117
	Glenelg	131	-	5	-
	Moyne	20	25	317	40
Nearshore Waters (Sub-LGA)	Apollo Bay	59	-	86	-
	Bay of Islands	20	25	317	40
	Cape Nelson	131	-	5	-
	Cape Otway West	23	39	420	67
	Childers Cove	193	-	19	-
	Moonlight Head	17	19	388	117
	Port Campbell	13	17	314	89
State Waters	Victoria State Waters*	4	4	420	117

*The release location resides within the receptor boundaries.

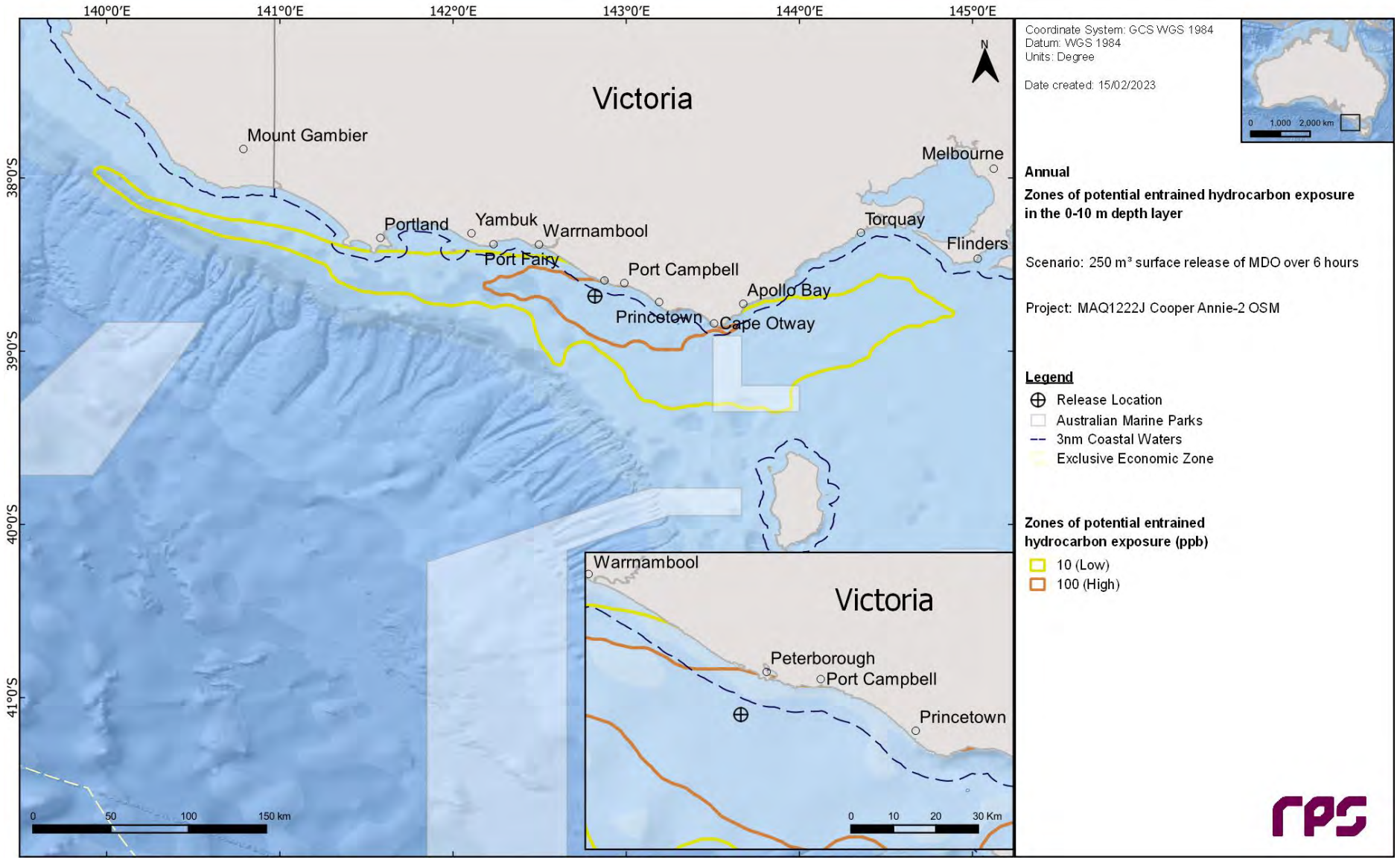

Figure 10.10 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

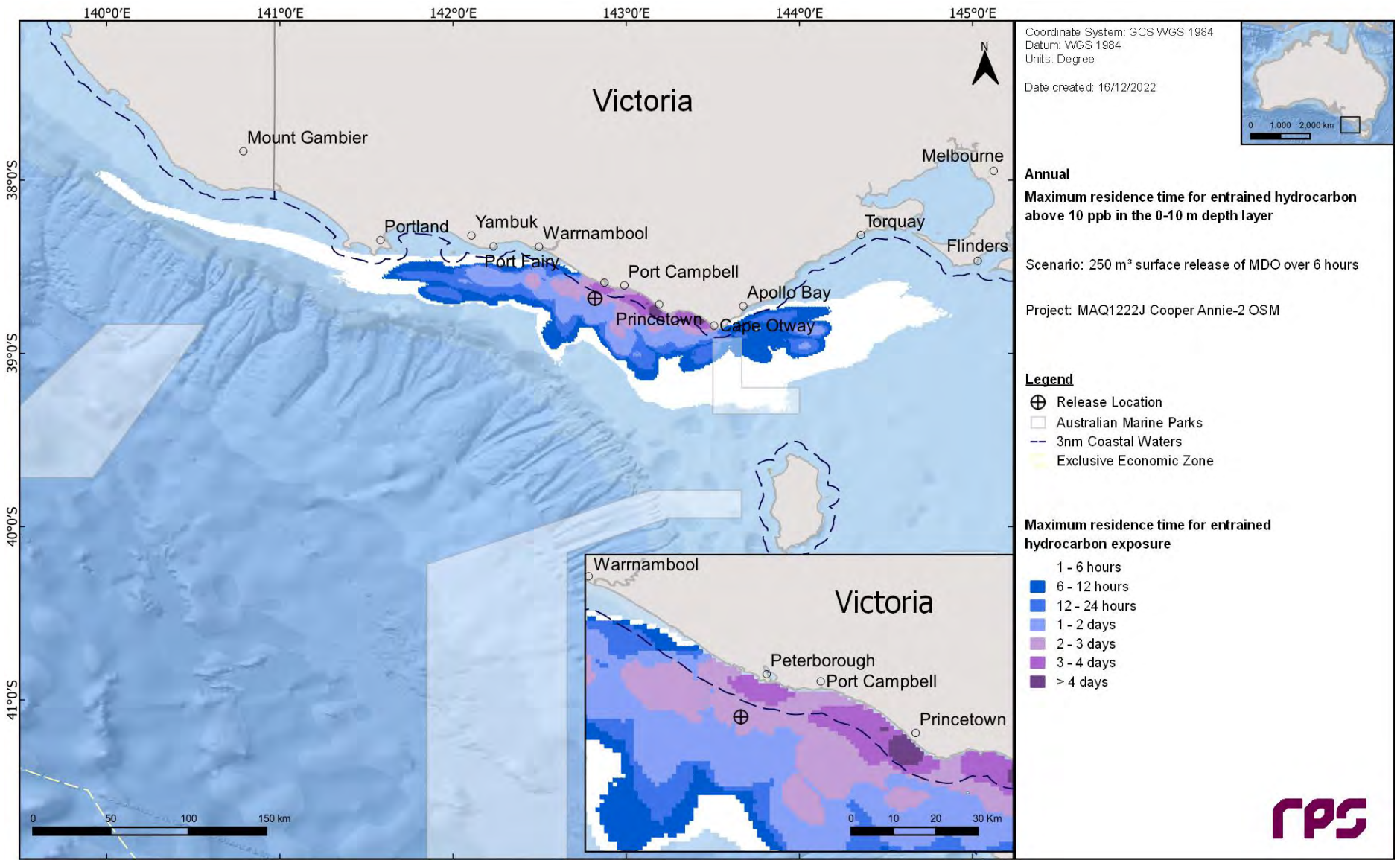

Figure 10.11 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

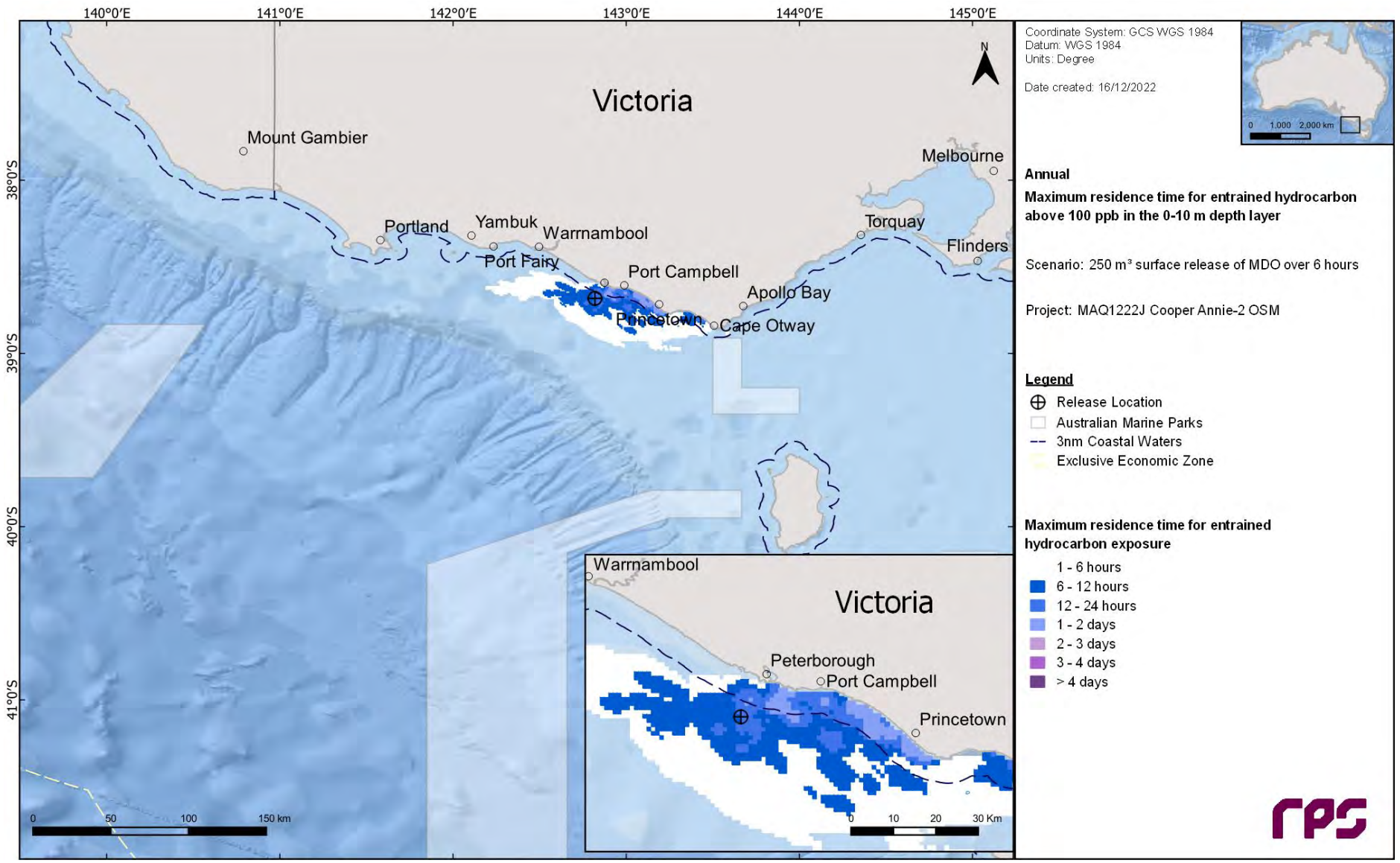

Figure 10.12 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea in the event of a 250 m³ of MDO containment loss over 6 hours tracked for 30 days. The results were calculated from 100 spill simulations.

10.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below for the following criteria:

a. Largest swept area for surface oil above 10 g/m^2
b. Largest swept area for surface oil above 50 g/m^2
c. Largest (total) volume of oil ashore
d. Longest length of shoreline with oil accumulation above 100 g/m^2
e. Largest area of entrained hydrocarbon exposure above 100 ppb
f. Largest area of dissolved hydrocarbon exposure above 50 ppb

Table 10-10 presents a summary of sea surface and in-water exposure and shoreline accumulation at the assessed thresholds for the identified deterministic simulations.

Table 10-10 Summary of the worst-case deterministic analysis based on the scenario presented in the Stochastic Analysis Section.

Variable	Threshold	Deterministic Analysis Criteria					
		Largest swept area of floating oil >10 g/m²	Largest swept area of floating oil >50 g/m²	Largest volume of oil ashore	Longest length of shoreline with accumulation >100 g/m²	Largest area of entrained hydrocarbon exposure >100 ppb	Largest area of dissolved hydrocarbon exposure >50 ppb
Run Number		**91**	**20**	**50**	**50**	**36**	**39**
Total area of floating Oil exposure (km²)	1 g/m²	149	57	4	4	8	18
	10 g/m²	**29**	27	1	1	2	2
	50 g/m²	2	**5**	0	0	0	1
Total length of shoreline accumulation (km)	10 g/m²	0	14	24	24	0	0
	100 g/m²	0	1	11	**11**	0	0
	1,000 g/m²	0	0	0	0	0	0
Minimum time before accumulation on any shoreline (hours)	10 g/m²	-	55	45	45	-	-
	100 g/m²	-	185	59	59	-	-
	1,000 g/m²	-	-	0	0	-	-
Total volume of oil ashore (m³)		1	9	**43**	43	-	1
Total area of entrained hydrocarbon exposure (km²)	10 ppb	1,062	513	383	383	2,044	1,066
	100 ppb	83	236	165	165	**636**	215
Total area of dissolved hydrocarbon exposure (km²)	10 ppb	-	-	-	-	43	18
	50 ppb	-	-	-	-	-	**2**
	400 ppb	-	-	-	-	-	-
Start Date		21 July 2012	9 January 2017	11 May 2012	11 May 2012	28 June 2016	18 September 2016

NC = No contact at, or above the specified shoreline accumulation threshold.

10.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m^2 was identified as run number 91, which started on 21st July 2012.

Figure 10.13 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 10.14 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation.

Figure 10.15 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.11 summarises the mass balance peaks and at the end of the simulation.

Table 10.11 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 10 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	168.6	0.3	0.0
Entrained (m^3)	124.4	2.8	41.1
Dissolved (m^3)	0.3	4.7	0.0
Evaporation (m^3)	123.8	29.7	123.8
Decay (m^3)	86.8	30.0	86.8
Ashore (m^3)	0.5	11.2	0.1

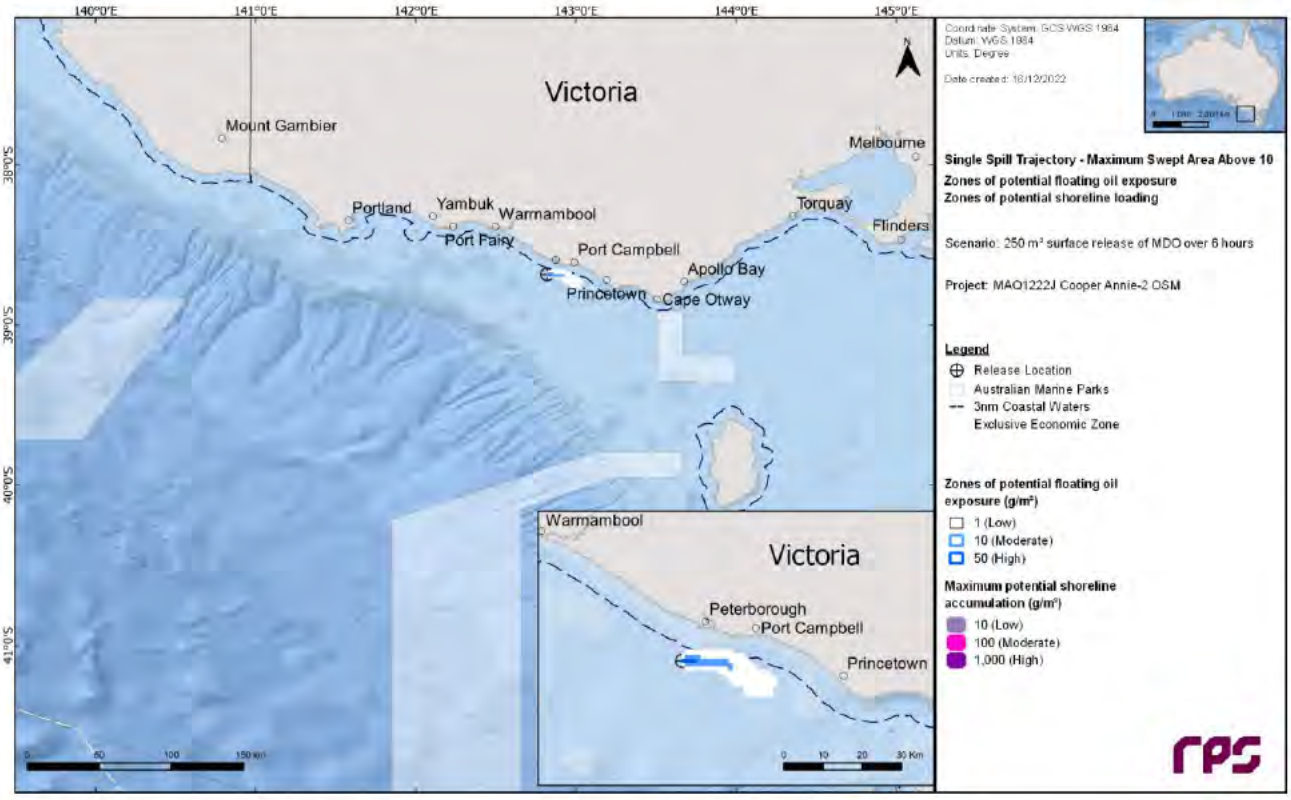

Figure 10.13 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 10 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

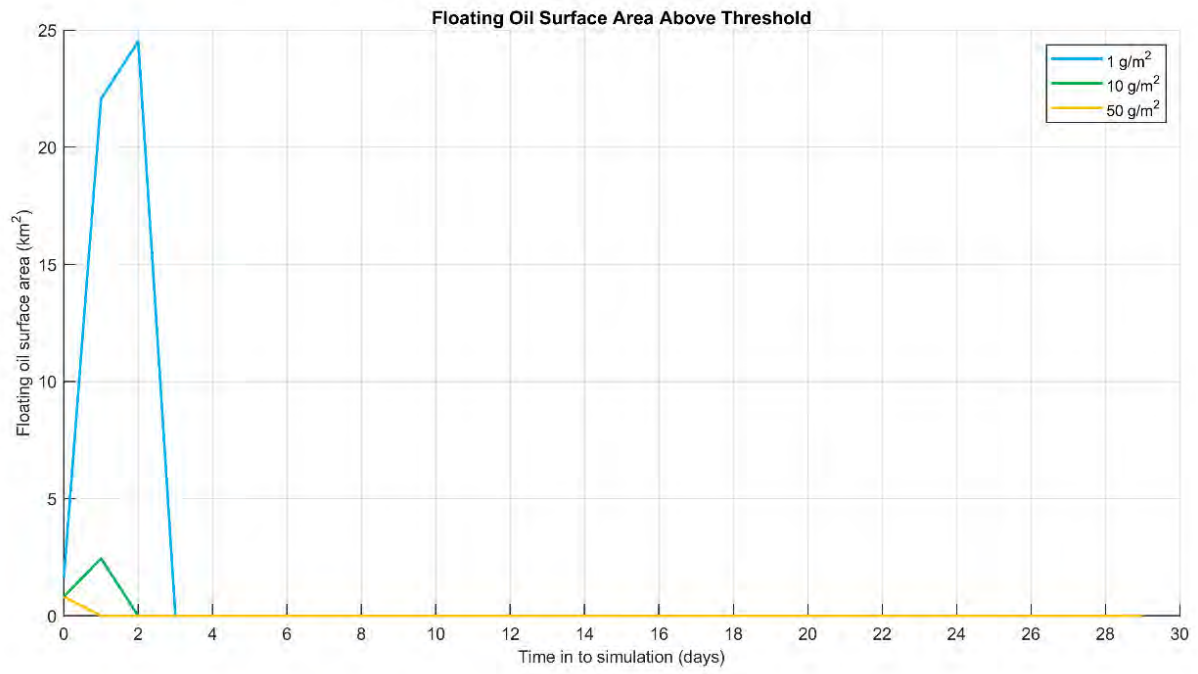

Figure 10.14 Time series of the sea surface exposure above each threshold for the trajectory with the largest swept area of floating oil above 10 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

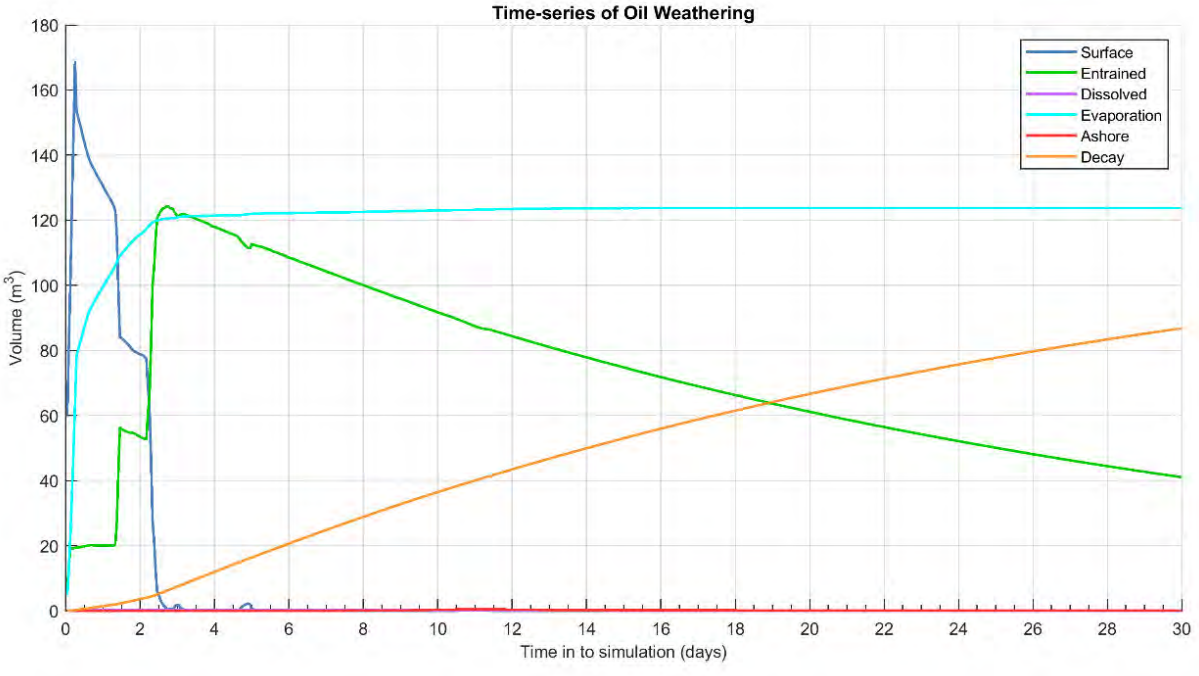

Figure 10.15 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

10.2.2 Deterministic Case: Largest swept area of floating oil above 50 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 50 g/m^2 was identified as run number 20, which started on 9th January 2017.

Figure 10.13 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 10.14 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation.

Figure 10.15 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.11 summarises the mass balance peaks and at the end of the simulation.

Table 10.12 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 50 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	183	0	0
Entrained (m^3)	140	1	40
Dissolved (m^3)	0	5	0
Evaporation (m^3)	120	30	120
Decay (m^3)	88	30	88
Ashore (m^3)	7	8	3

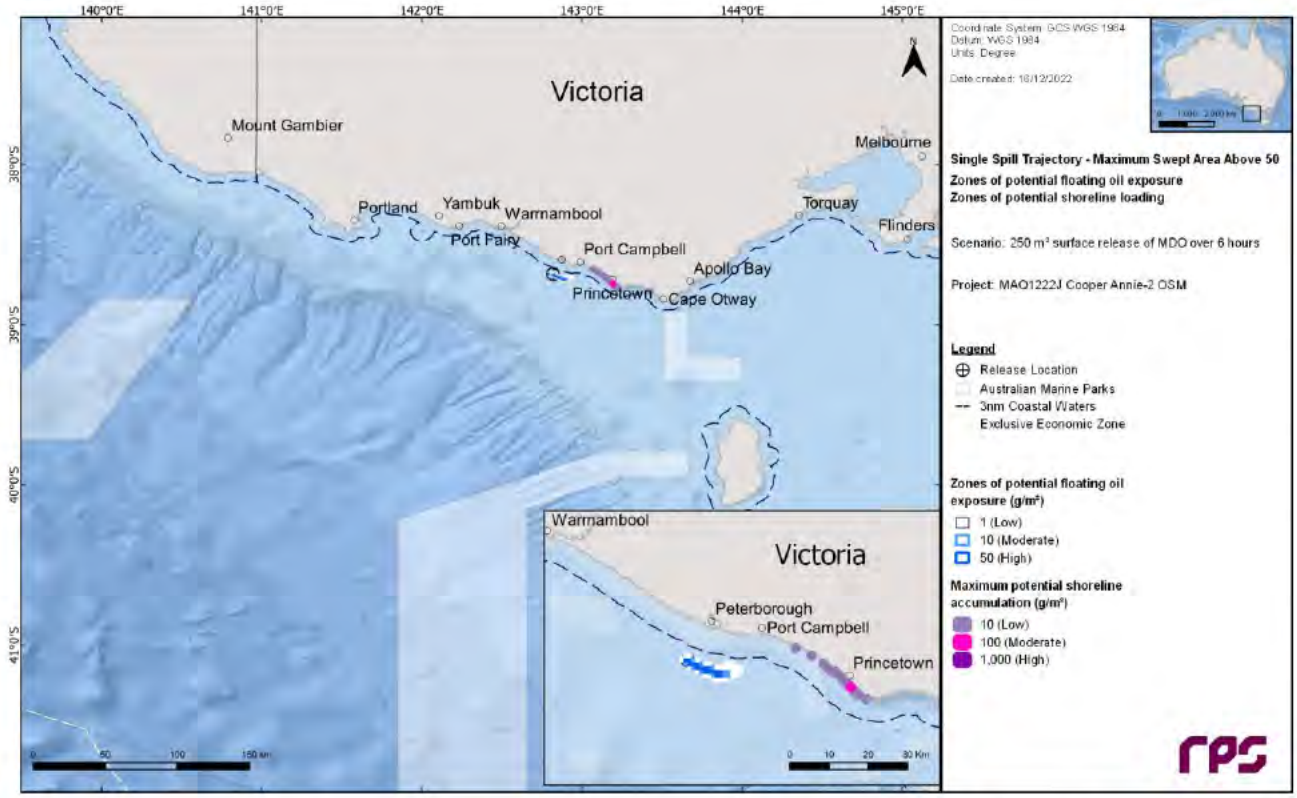

Figure 10.16 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 50 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

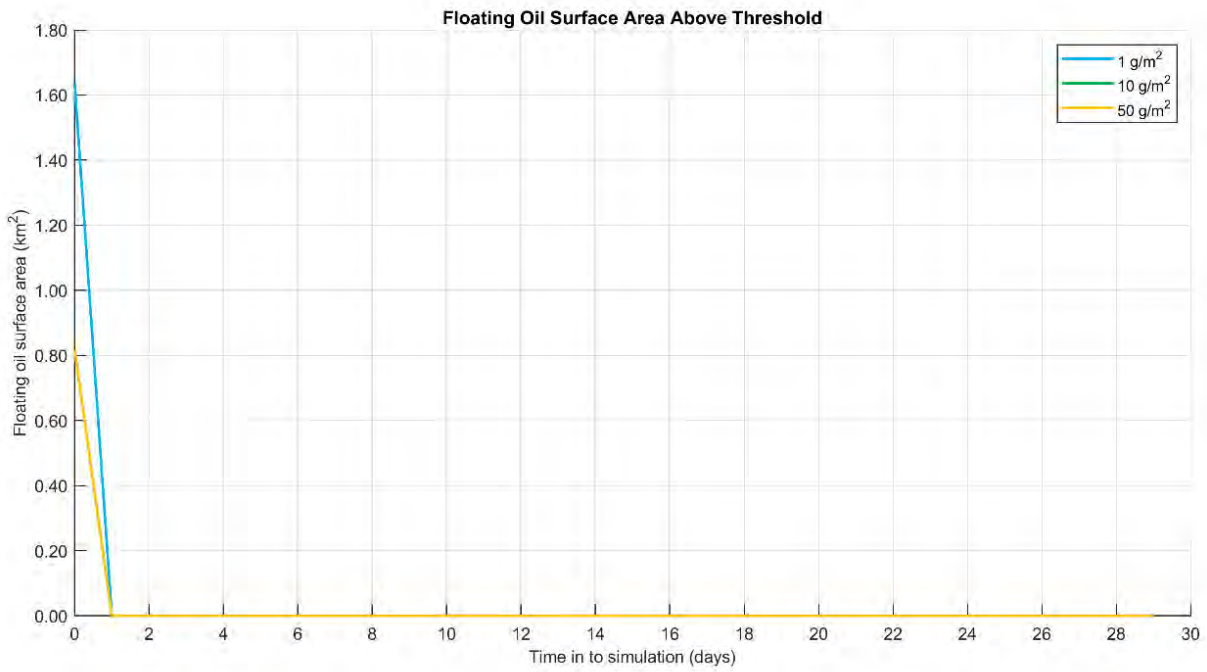

Figure 10.17 Time series of the sea surface exposure above each threshold for the trajectory with the largest swept area of floating oil above 50 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

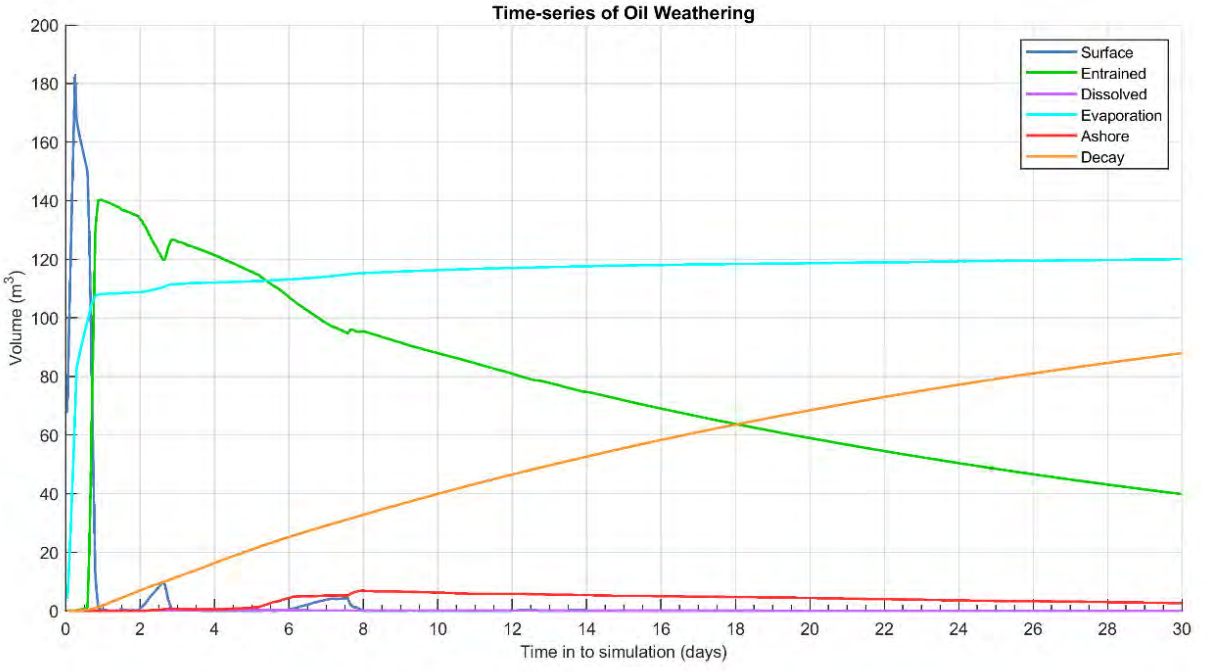

Figure 10.18 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 50 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

10.2.3 Deterministic Case: Largest volume of oil ashore and longest length of shoreline with accumulation above 100 g/m^2

The deterministic trajectory that resulted in the largest volume ashore and longest length of shoreline with accumulation above 100 g/m^2 was identified as run number 50, which started on 11th May 2012.

Figure 10.19 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 10.20 displays the time series of the length of shoreline with accumulation at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds over the 30-day simulation.

Figure 10.22 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.13 summarises the mass balance peaks and at the end of the simulation.

Table 10.13 Summary of the mass balance for the trajectory with the largest volume ashore and longest length of shoreline with accumulation above 100 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	39	0	0
Entrained (m^3)	193	0	36
Dissolved (m^3)	0	2	0
Evaporation (m^3)	92	30	92
Decay (m^3)	96	30	96
Ashore (m^3)	37	9	28

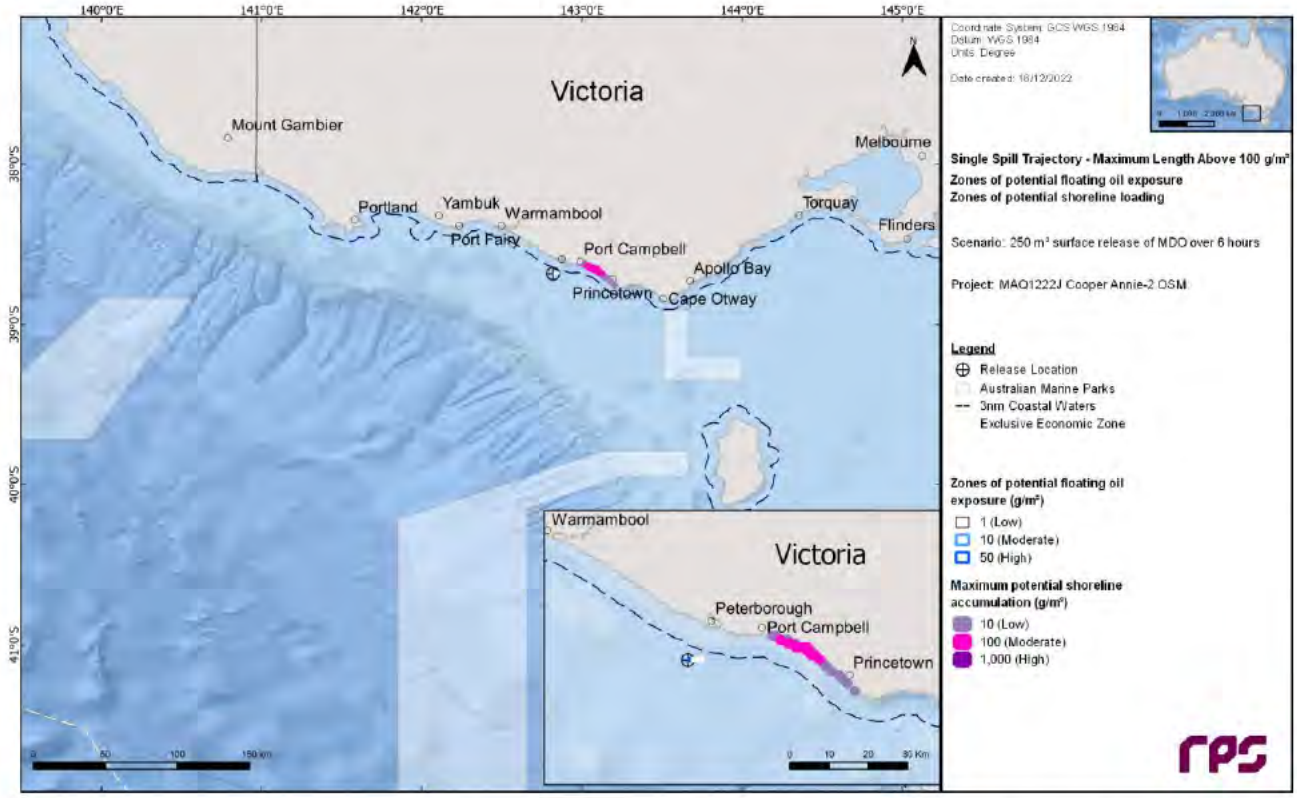

Figure 10.19 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume ashore and longest length of shoreline with accumulation above 100 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

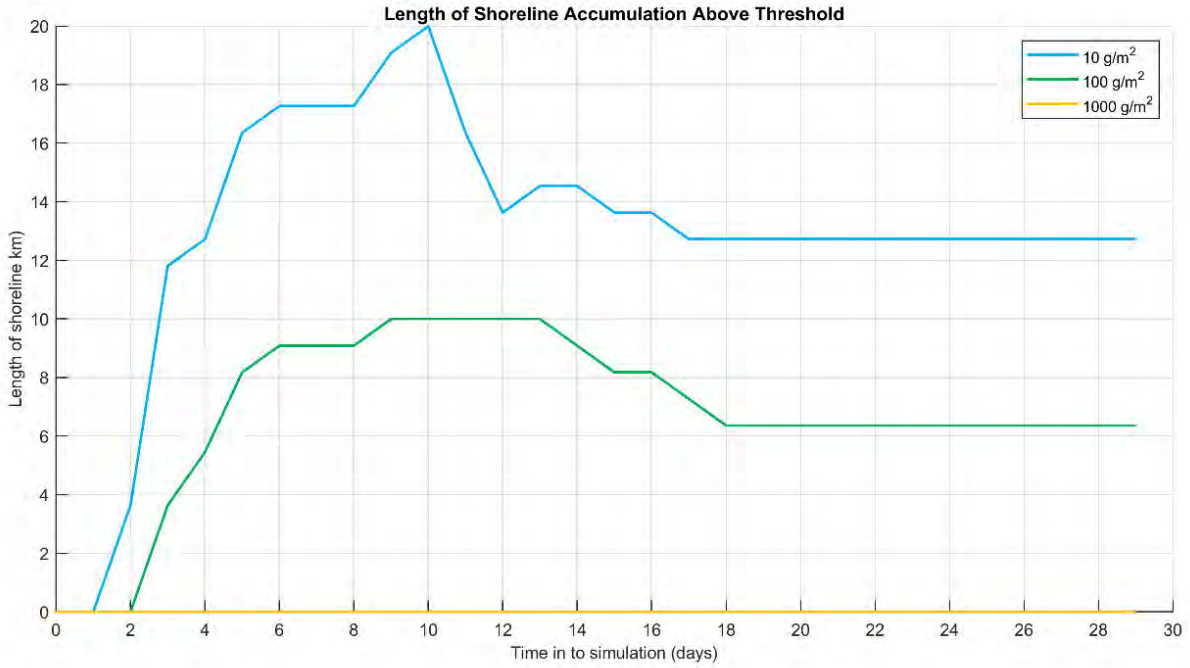

Figure 10.20 Time series of the length of shoreline with accumulation above each threshold for the trajectory with the largest volume ashore and longest length of shoreline with accumulation above 100 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

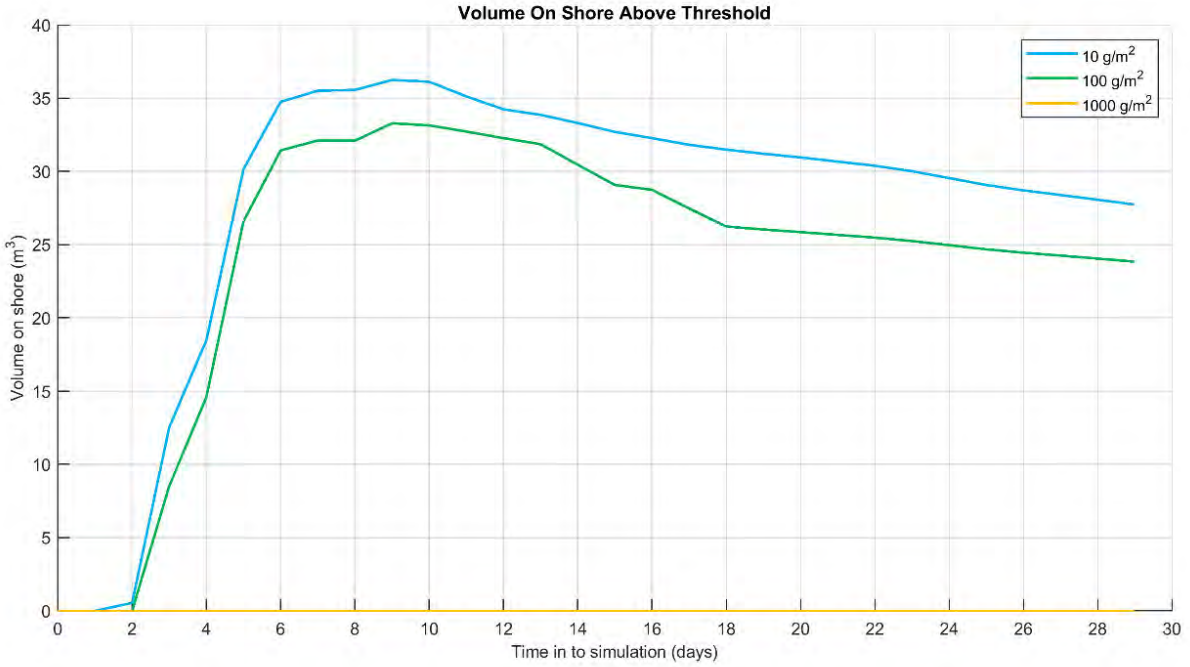

Figure 10.21 Time series of oil accumulation on the shoreline above each threshold for the trajectory with the largest volume ashore and longest length of shoreline with accumulation above 100 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

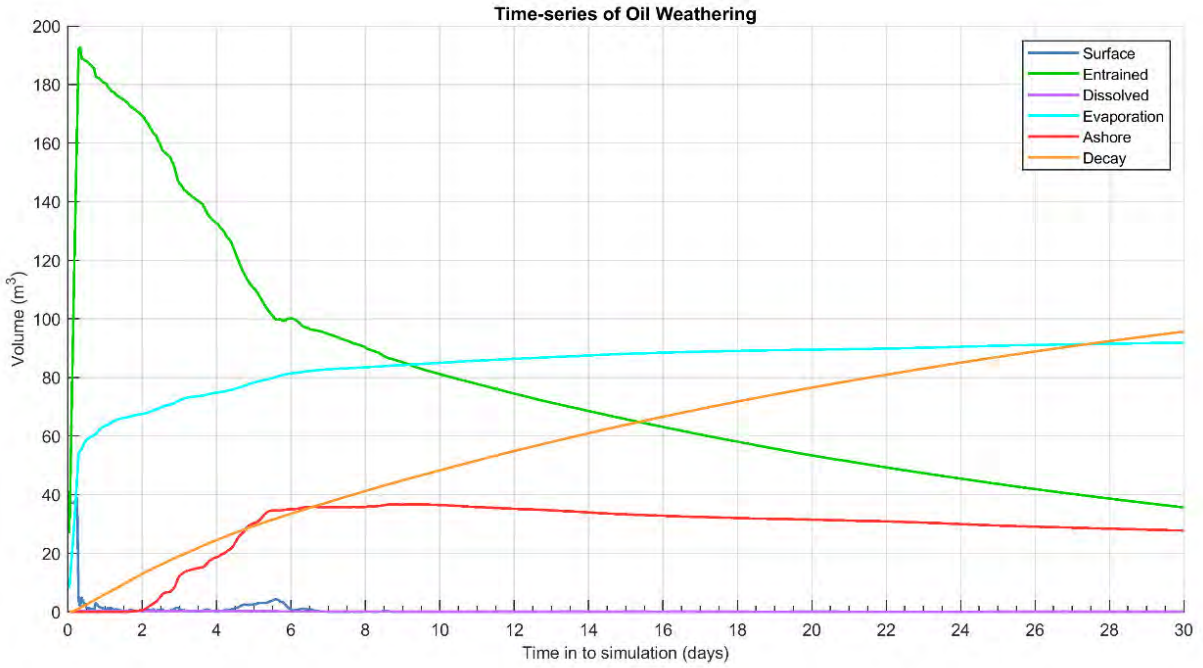

Figure 10.22 Predicted weathering and fates graph for the trajectory with the largest volume ashore and longest length of shoreline with accumulation above 100 g/m^2. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

10.2.4 Deterministic Case: Largest area of entrained hydrocarbon exposure above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbon exposure above 100 ppb was identified as run number 36, which started on 28th June 2016.

Figure 10.23 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 10.24 displays the time series of the area of entrained hydrocarbon exposure at the low (10 ppb) and high (100 ppb) thresholds over the 30-day simulation.

Figure 10.25 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.14 summarises the mass balance peaks and at the end of the simulation.

Table 10.14 Summary of the mass balance for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	59	0	0
Entrained (m^3)	209	0	52
Dissolved (m^3)	2	0	0
Evaporation (m^3)	65	30	65
Decay (m^3)	134	30	134
Ashore (m^3)	0	5	0

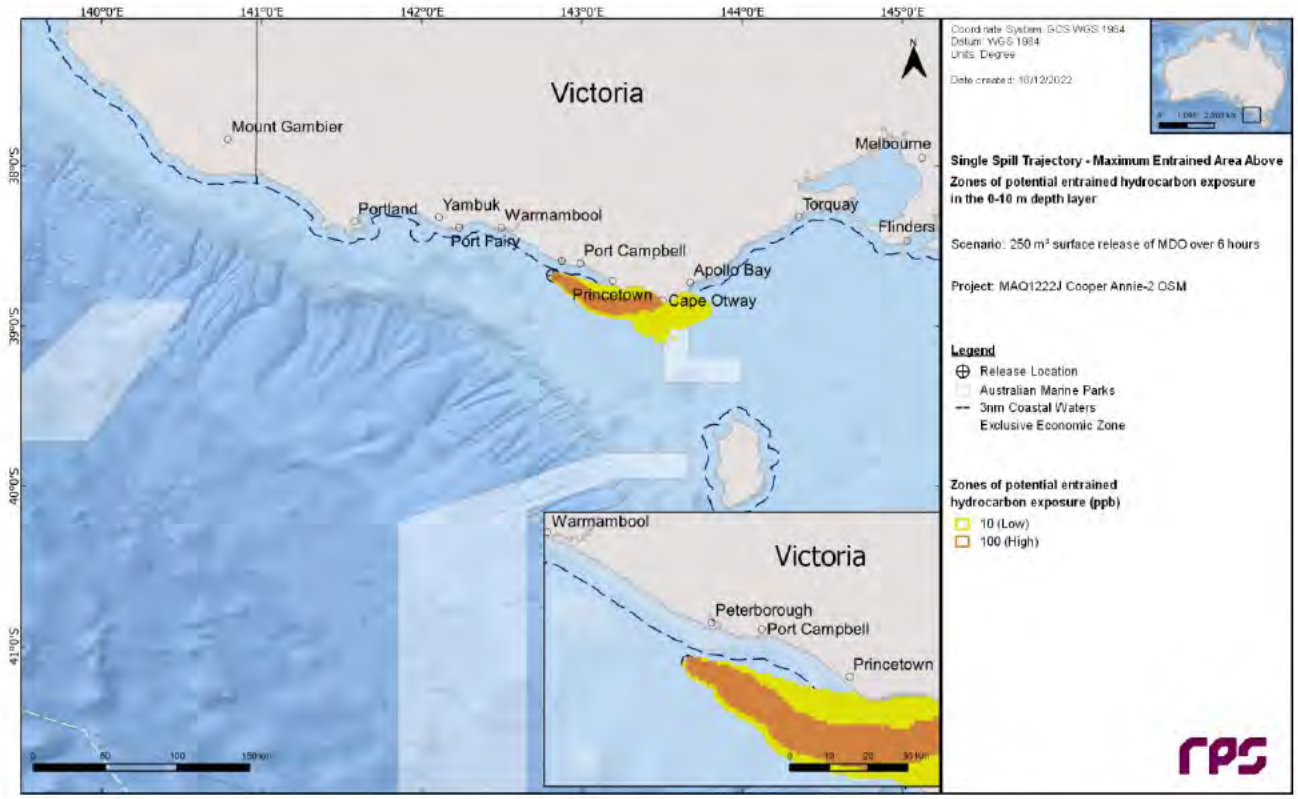

Figure 10.23 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

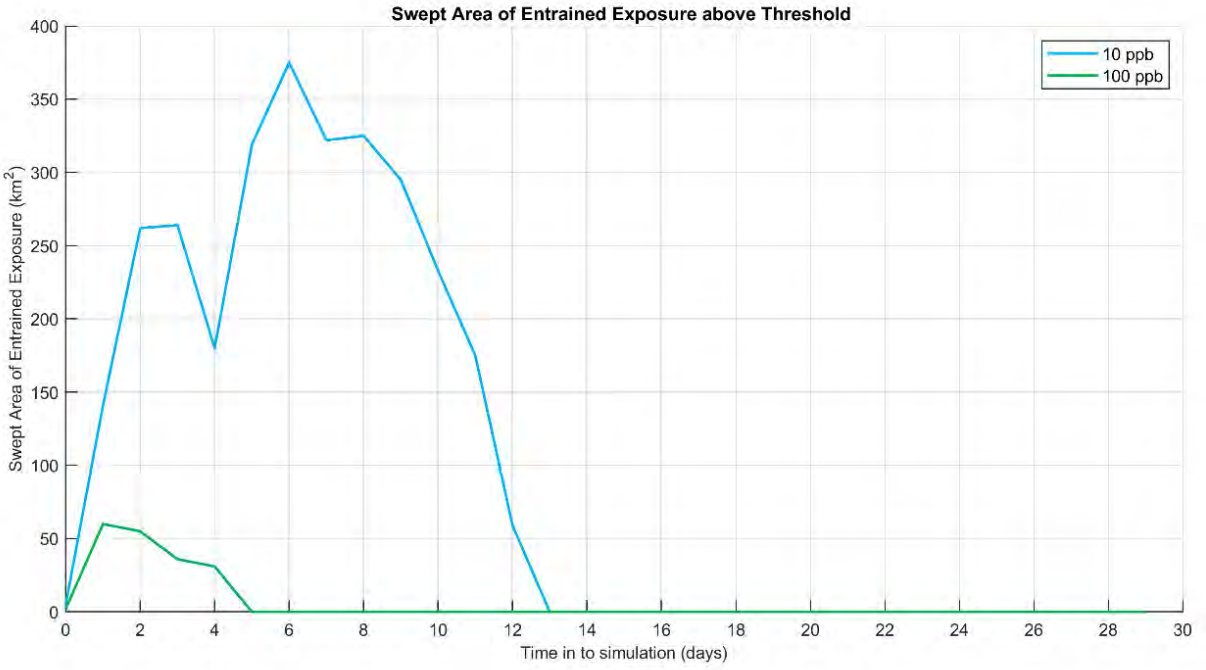

Figure 10.24 Time series of the entrained hydrocarbon exposure area above each threshold for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

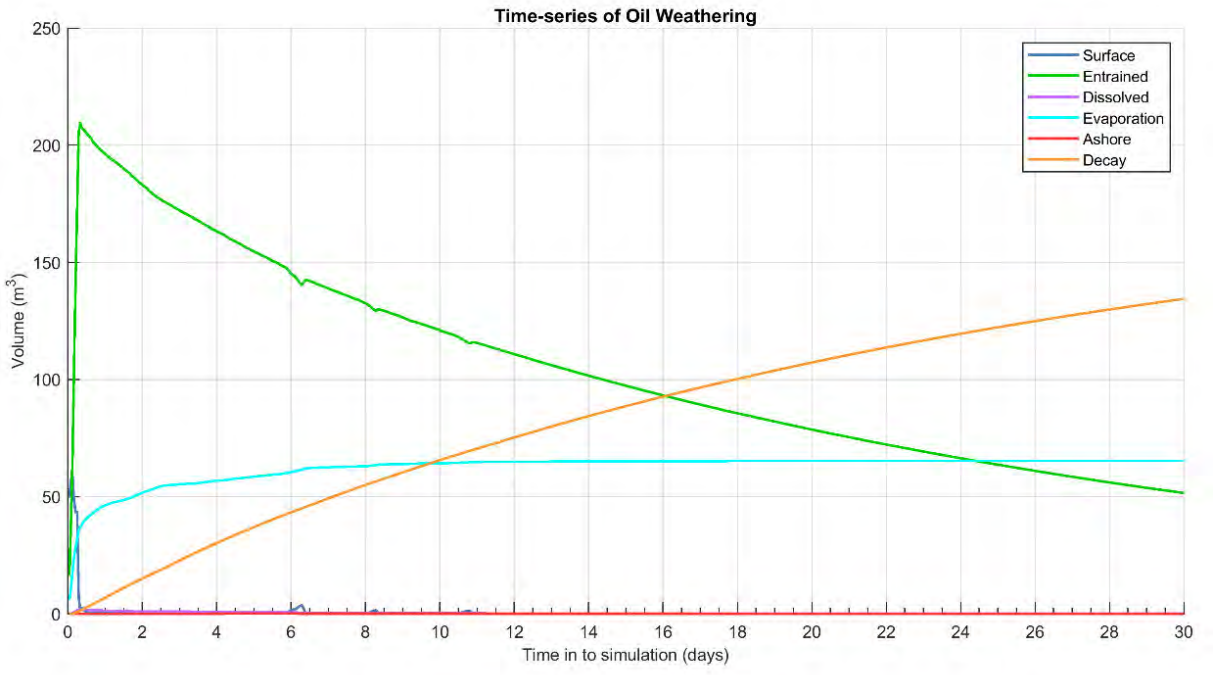

Figure 10.25 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

10.2.5 Deterministic Case: Largest area of dissolved hydrocarbon exposure above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 50 ppb was identified as run number 39, which started on 18th September 2016.

Figure 10.26 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 10.27 displays the time series of the area of dissolved hydrocarbon exposure at the low (10 ppb), moderate (50 ppb) and high (400 ppb) thresholds over the 30-day simulation.

Figure 10.28 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.15 summarises the mass balance peaks and at the end of the simulation.

Table 10.15 Summary of the mass balance for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb. Results are based on a 250 m^3 surface release of MDO over 6 hours.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	61	0	0
Entrained (m^3)	210	0	49
Dissolved (m^3)	2	0	0
Evaporation (m^3)	83	30	83
Decay (m^3)	120	30	120
Ashore (m^3)	0	10	0

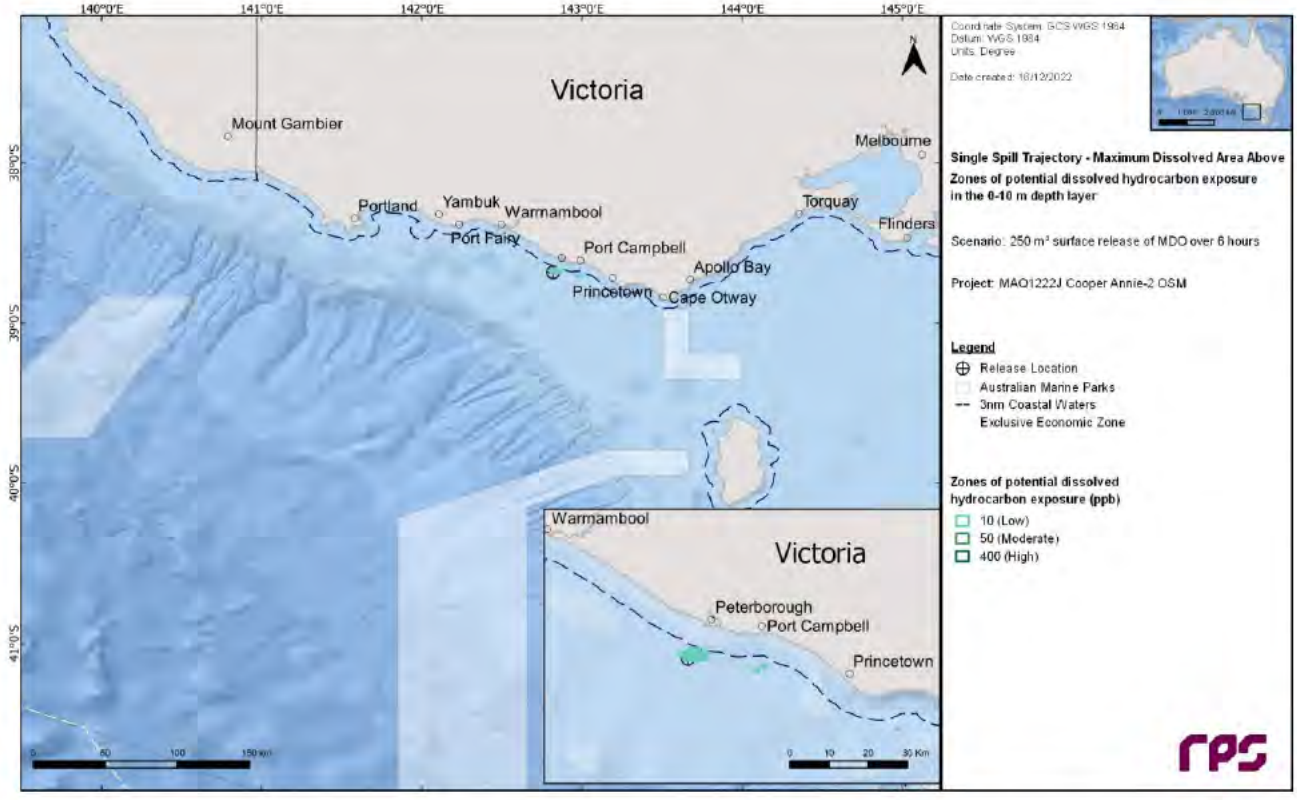

Figure 10.26 Zones of potential dissolved hydrocarbon exposure, for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

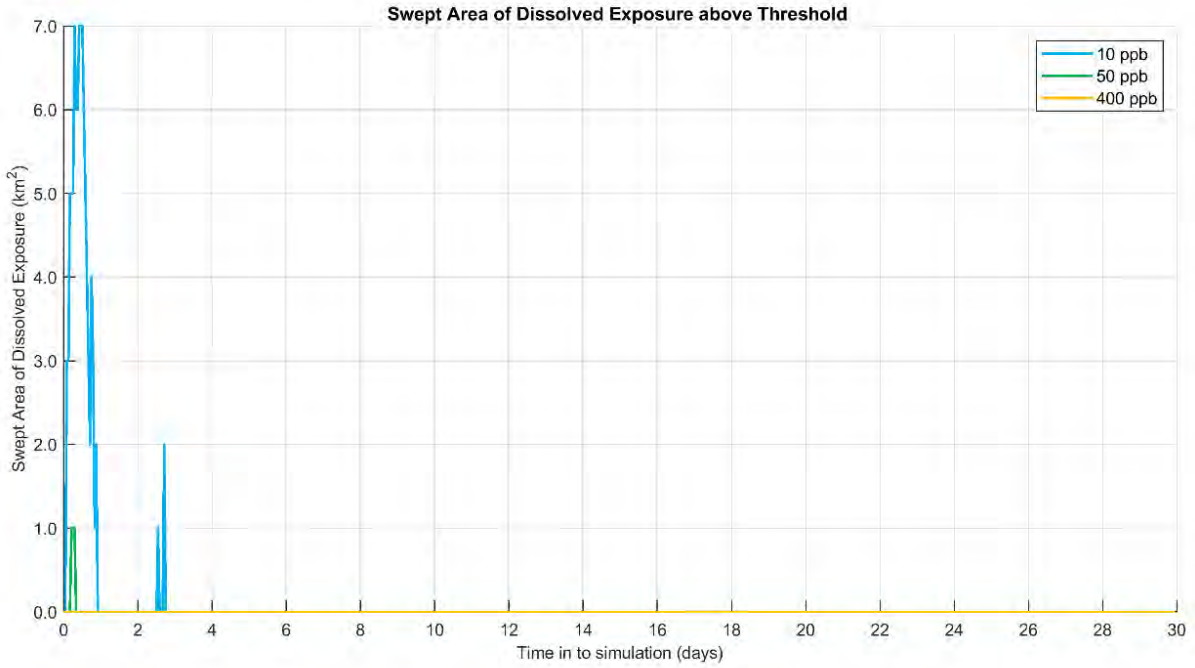

Figure 10.27 Time series of the dissolved hydrocarbon exposure area above each threshold for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

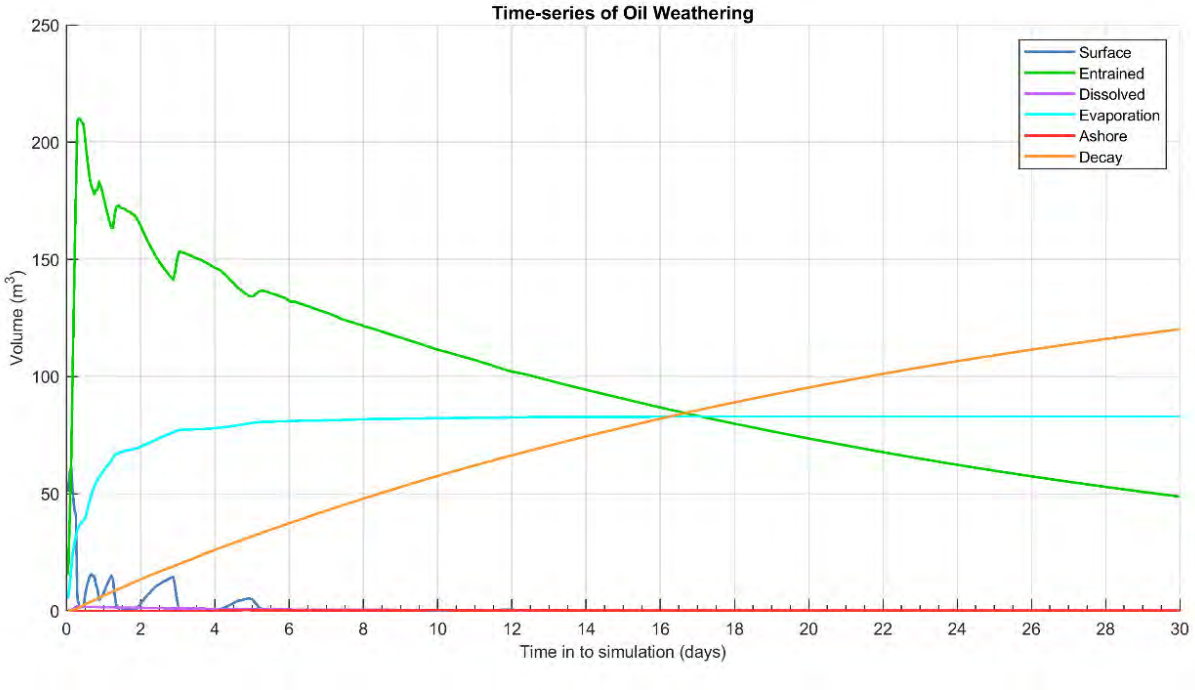

Figure 10.28 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb. Results are based on a 250 m^3 surface release of MDO over 6 hours, tracked for 30 days.

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Appendix 7 - Subsea Noise Modelling

Amplitude Energy Otway Subsea Noise Modelling

Acoustic Modelling for Assessing Marine Fauna Sound Exposures

JASCO Applied Sciences (Australia) Pty Ltd

27 May 2025

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Executive Summary

JASCO Applied Sciences (JASCO) performed a modelling study of underwater sound levels associated with Amplitude Energy's Otway current and potential future offshore activities.

The modelling study considers the activities associated with drilling and vessel operations. These operations include a Mobile Offshore Drilling Unit (MODU) under dynamic positioning (DP), an anchored MODU conducting drilling operations, and an associated Anchor Handling Tug and Supply Vessel (AHTS), conducting re-supply of the MODU under DP, and standing by near the MODU, as well as pre-lay, pipelaying and dive support scenarios. This study considered scenarios to represent operations, which could occur within Amplitude Energy's Title holdings. The representative modelled scenarios are located at the Annie-2 and Elanora-1 locations along with pipelay between Annie-2 and Casino-5. A concurrent operations scenario was also considered involving simultaneous drilling activities at Elanora-1 and pipelay operations between Annie-2 and Casino-5.

The study assessed distances from operations to where underwater sound levels reached thresholds corresponding to various levels of potential impact to marine fauna. The animals considered here included marine mammals, turtles, and fish. Due to the variety of species considered, there are several different thresholds for evaluating effects, including: mortality, injury, temporary reduction in hearing sensitivity, and behavioural disturbance.

The modelling methodology considered scenario specific source levels and range-dependent environmental properties. Estimated underwater acoustic levels for non-impulsive (continuous) noise sources presented as sound pressure levels (SPL, L_p), and as accumulated sound exposure levels (SEL, L_E) as appropriate for different noise effect criteria. In this report, the duration of the SEL accumulation is defined as integrated over an 8- or 24-hour period.

The SPL metric is the root-mean-square pressure level over a stated frequency band over a specified time window. In this study, for continuous noise, a time window of 1 s was used. An animal travelling within the threshold can be exposed to a sound level could be exposed to behavioural disturbance. The SEL_{24h} is a cumulative metric that reflects the dosimetric impact of noise levels within 24 hours based on the assumption that an animal is consistently exposed to such noise levels at a fixed position. The corresponding SEL_{24h} radii represent an unlikely worst-case scenario. More realistically, marine mammals (as well as fish and turtles) would not stay in the same location for 24 hours. Therefore, a reported radius for SEL_{24h} criteria does not mean that marine fauna travelling within this radius of the source will be injured, but rather that an animal could be exposed to the sound level associated with impairment if it remained in that location for 24 hours.

Maps are provided in the report to assist with contextualising tabulated distances. The key results of this modelling study are summarised in Tables 1 and 6.

Marine mammals:

The maximum distances to the (NOAA) (2024) marine mammal behavioural response criterion of 120 dB re 1 µPa (SPL) are presented in Table 1. The results for the criteria from NMFS (2024) for marine mammal Permanent Threshold Shift (PTS) and Temporary Threshold Shift (TTS) for MODU and vessel operations are assessed at in-field, the maximum distances and total ensonified areas are presented in Table 2. PTS is a form of auditory injury as it is referred to in NMFS (2024) (using the acronym AUD INJ), however in this report for consistency with previous work the term PTS is used.

Table 1. Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) to the marine mammal behavioural response criterion of 120 dB re 1 µPa (SPL) from the most appropriate location for considered sources per scenario. MODU: Mobile Offshore Drilling Unit, OSV: Offshore Supply Vessel

Location	Operation	Description	R_{max} (km)	$R_{95\%}$ (km)
Annie-2	Drilling Prelays	1x anchor handler within 2km of location DP/slow transit	0.44	0.41
	Mooring	Moored MODU idle (no noise) 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	7.87	7.32
	MODU Drilling	Anchored MODU Drilling	1.10	1.02
	MODU Drilling + OSV Under Standby	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust)	1.13	1.03
	MODU Drilling Operations with Standby OSV and resupply	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust) 1x anchor Handler at rig doing resupply	7.46	7.11
	MODU on DP	MODU on DP	5.36	4.83
	Mooring with MODU on DP	MODU on DP 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	8.02	7.46
Elanora-1	Drilling Prelays	1x anchor handler within 2km of location DP/slow transit	0.75	0.72
	Mooring	Moored Semi Sub idle (no noise) 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	21.7	18.8
	MODU Drilling	Anchored MODU Drilling	1.89	1.79
	MODU Drilling + OSV Under Standby	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust)	2.91	2.58
	MODU Drilling Operations with Standby OSV and resupply	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust) 1x anchor Handler at rig doing resupply	21.7	18.7
	MODU on DP	MODU on DP	12.0	11.3
	Mooring with MODU on DP	MODU on DP 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	24.8	21.7
Between Annie-2 & Casino-5†	Pipeline/Umbilical installation (ISV) Annie EHU	Laying Pipes and umbilicals - 600m/hour	5.97	5.41
Annie-2	Installation (DSV)	DSV + HRV (no noise) stationary on location	2.56	2.30
Between Annie-2 & Casino-5, with Elanora-1†	MODU Drilling Operations, Standby OSV, OSV resupply and Pipeline/Umbilical installation (ISV) Annie EHU	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust) 1x anchor Handler at rig doing resupply Laying Pipes and umbilicals - 600m/hour	30.7	28.2

† These scenarios consider several source locations, the presented distances in the summary table are the largest. Results in Section 4.1 provide additional detail.

Table 2. Summary: Maximum (R_{max}) horizontal distances (in km) and ensonified area (km^2) for the frequency-weighted LF-cetacean SEL_{24h} TTS threshold of 177 dB re 1 µPa^2·s from the most appropriate location for the considered scenario. MODU: Mobile Offshore Drilling Unit, OSV: Offshore Supply Vessel

Location	Operation	Description	R_{max} (km)	Area (km^2)
Annie-2	Drilling Prelays	1x anchor handler within 2km of location DP/slow transit	–	–
	Mooring	Moored Semi Sub idle (no noise) 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	3.60	28.2
	MODU Drilling	Anchored MODU Drilling	0.48	0.66
	MODU Drilling + OSV Under Standby	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust)	0.48	0.66
	MODU Drilling Operations with Standby OSV and resupply	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust) 1x anchor Handler at rig doing resupply	2.16	7.61
	MODU on DP	MODU on DP	1.73	8.50
	Mooring with MODU on DP	MODU on DP 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	3.88	39.7
Elanora-1	Drilling Prelays	1x anchor handler within 2km of location DP/slow transit	–	–
	Mooring	Moored Semi Sub idle (no noise) 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	7.54	131
	MODU Drilling	Anchored MODU Drilling	0.59	0.99
	MODU Drilling + OSV Under Standby	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust)	0.63	1.00
	MODU Drilling Operations with Standby OSV and resupply	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust) 1x anchor Handler at rig doing resupply	3.84	37.6
	MODU on DP	MODU on DP	2.85	23.9
	Mooring with MODU on DP	MODU on DP 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	7.92	176
Between Annie-2 & Casino-5	Installation (ISV) Annie EHU	Laying Pipes and umbilicals - 600m/hour	0.63	11.5
Annie-2	Installation (DSV)	DSV + HRV (no noise) stationary on location	0.94	2.53
Between Annie-2 & Casino-5, with Elanora-1†	MODU Drilling Operations, Standby OSV, OSV resupply and Pipeline/Umbilical installation (ISV) Annie EHU†	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (not DP, minimal thrust) 1x anchor Handler at rig doing resupply Laying Pipes and umbilicals - 600m/hour	7.50	148

† This scenario is a combination of Scenario 5 at Elanora-1 and Scenario 6 to represent concurrent operations.

Sea Turtles:

The threshold criteria from Accomando et al. (2025) was used to assess PTS and TTS for sea turtles. Similar to marine mammals, PTS is a form of auditory injury as it is referred to in Accomando et al. (2025) (using the acronym AINJ), however in this report for consistency with previous work the term PTS is used. Across all scenarios the maximum distance to threshold for Annie and Elanora is shown in Table 3.

Table 3. Summary, SEL_{24h}: Maximum (R_{max}) horizontal distances (in km) to sound pressure level (SPL) criteria (Accomando et al. 2025) from most appropriate location for considered sources per scenario.

Location	Maximum (R_{max}) distance to threshold (km)	
	TTS	PTS
Annie-2	2.26	0.50
Elanora-1	4.45	0.49

Fish:

Sound produced by the MODU and/or vessel operations reach the sound levels associated with physiological effects, recoverable injury, and TTS for some fish species in close proximity to the sound sources (Table 4), but in order for the thresholds to be exceeded, the fish must remain at those distances for either 12 or 48 h.

Table 4. Summary: *SPL*: Maximum (R_{max}) horizontal distances (in km) to sound pressure level (SPL) criteria (Popper et al. 2014) from most appropriate location for considered sources per scenario.

Location	Maximum (R_{max}) distance to threshold (km)	
	TTS (12 h)	Recoverable injury (48 h)
Annie-2	0.13	0.03
Elanora-1	0.13	0.03

1. Introduction

JASCO Applied Sciences (JASCO) performed a modelling study of underwater acoustic noise levels associated with Amplitude Energy's Otway activities. The modelling study specifically predicted the distances from operations at which underwater sound levels reached noise effect thresholds and criteria. The corresponding marine mammal thresholds include levels associated with behavioural response, permanent threshold shift (PTS) and temporary threshold shift (TTS). The marine mammal functional hearing groups considered were low-, high-, very high-frequency cetaceans, and otariid seals. Estimated underwater acoustic levels are presented as sound pressure levels (SPL, L_p), and accumulated sound exposure levels (over 24 hours) (SEL_{24h}, $L_{E,24h}$), as appropriate for non-impulsive (continuous) noise sources.

This report is further structured as follows, the remainder of Section 1 provides details on the scenarios considered for modelling, Section 2 explains the metrics used to represent underwater acoustic fields and the effect criteria considered. Section 3 details the methodology for predicting the source levels and modelling the sound propagation, including the specifications of the considered sound sources and the environmental parameters. Section 4.1 presents the acoustic results as tabulated ranges to thresholds, Section 4.2 provides sound level contour maps. The acoustic modelling results are then discussed in Section 5.

1.1. Modelling Scenarios

Three well locations, Elanora-1, Annie-2, and Casino-5, were considered in this report to capture, and be representative of, the different geographic locations where activities may occur. Figure 1 displays an overview of the modelling area showing locations, the southern right whale BIA, the pygmy blue whale BIA, and the regional bathymetry. This study considered the following sound-producing activities:

- Drilling noise from an anchored Mobile Offshore Drilling Unit (MODU),
- Thruster noise from a MODU under dynamic positioning (DP),
- Vessel noise from an Anchor Handling Tug Supply (AHTS) on slow transit in prelay and hookup operations which was modelled as following a random track in a 2x2 km box centred around either Annie-2 or Elanora-1,
- Vessel noise from an Anchor Handling Tug Supply (AHTS) on slow transit in standby operation which was modelled as following a random track and was confined to a 2x4 km area approximately 2 km from either Annie-2 or Elanora-1,
- Vessel noise from an AHTS conducting resupply operations under DP,
- Vessel noise from an Infield Support Vessel (ISV) conducting pipelay operations following a track and making headway at a rate 600 m/hr,
- Vessel noise from a Dive Support Vessel (DSV) under DP and a Hyperbaric Rescue Vessel (HRV). . After reviewing the vessel specifications, the HRV was considered to be significantly quieter than the DSV such that noise from the DSV would dominate the sound field. Hence the HRV is listed here for completeness but was not modelled.
- Concurrent operations involving drilling activities at Elanora-1 and pipelay operations between Annie-2 and Casino-5.

These activities are typical and representative of operations that may be conducted within Amplitude Energy's Title areas. Table 5 and Table 6 outline the modelling locations and scenarios. The scenario

numbering in Table 6 refers to a unique activity, which may occur at a stated location. Hence results are presented with the scenario number together with a location as a unique identifier.

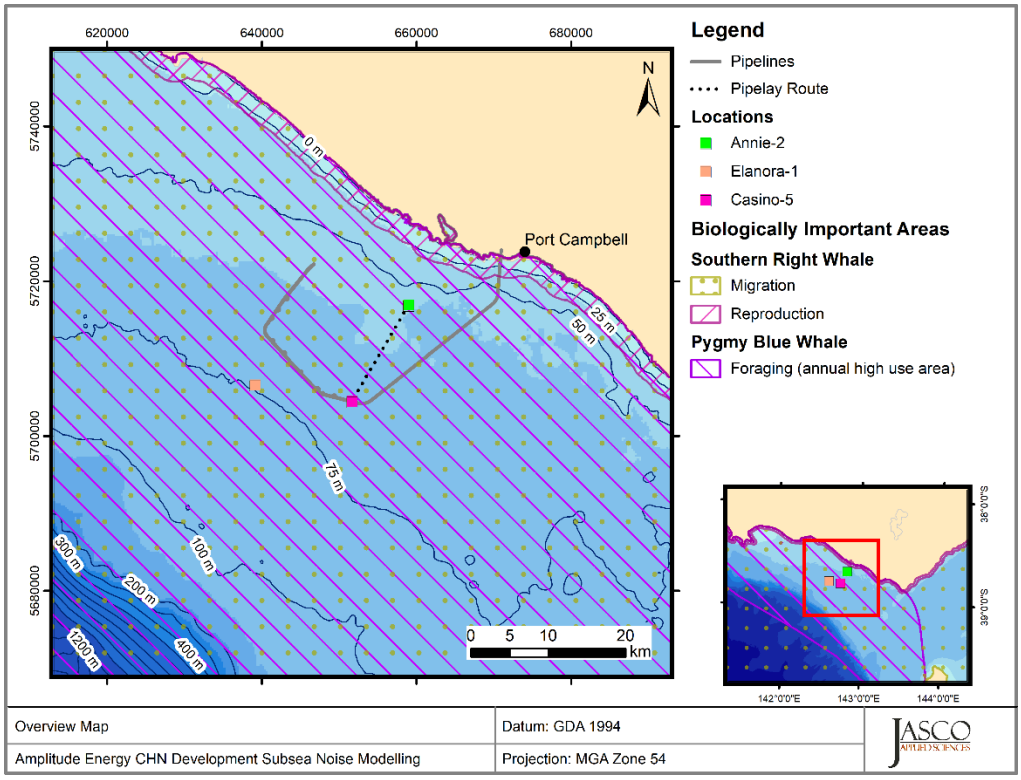

Figure 1. Overview map of the relevant features of the Amplitude Energy Otway Offshore Facilities.

Table 5. Modelled site locations and source information.

Site	Source/Vessel	Location	Latitude (°S)	Longitude (°E)	MGA[1] Zone 54		Water depth (m)
					X (m)	Y (m)	
1	AHTS (Transit)	Annie-2	38° 40' 57.62"	142° 48' 16.37"	656960	5716892	55.8
2	AHTS (DP)		38° 41' 12.43"	142° 49' 39.68"	658964	5716395	59.2
3	AHTS (Transit)		38° 40' 53.76"	142° 51' 01.78"	660959	5716931	61.8
4	MODU (Drilling)		38° 40' 56.22"	142° 49' 39.10"	658960	5716895	57.9
5	AHTS (Transit)		38° 40' 57.62"	142° 48' 16.37"	656960	5716892	55.8
6	AHTS (DP)		38° 40' 57.19"	142° 49' 39.15"	658961	5716865	58.0
7	AHTS (Transit)	Elanora-1	38° 46' 43.61"	142° 34' 41.43"	637085	5706589	77.0
8	AHTS (DP)		38° 46' 58.70"	142° 36' 04.82"	639089	5706089	75.7
9	AHTS (Transit)		38° 46' 40.93"	142° 37' 27.11"	641085	5706602	74.0
10	MODU (Drilling)		38° 46' 42.49"	142° 36' 04.28"	639085	5706589	75.0
11	AHTS (Transit)		38° 46' 43.61"	142° 34' 41.43"	637085	5706589	77.0
12	AHTS (DP)		38° 46' 43.46"	142° 36' 04.29"	639085	5706559	75.0
13	ISV (Pipelay)	Between Annie-2 & Casino-5	38° 44' 19.97"	142° 47' 12.03"	655284	5710684	61.0
14	ISV (Pipelay)	Annie-2	38° 40' 56.22"	142° 49' 39.10"	658960	5716895	57.9
15	ISV (Pipelay)	Casino-5	38° 46' 42.49"	142° 36' 04.28"	639085	5706589	75.0
16	DSV (Standby)	Annie-2	38° 40' 56.22"	142° 49' 39.10"	658960	5716895	58.0
17	MODU (DP)	Annie-2	38° 40' 56.22"	142° 49' 39.10"	658960	5716895	57.9
18	MODU (DP)	Elanora-1	38° 46' 42.49"	142° 36' 04.28"	639085	5706589	75.0

[1] Map Grid of Australia (MGA)

Table 6. Description of modelled scenarios.

Scenario	Site(s)	Location	Operation Name	Operation Description	Operation Time	Vessel(s)
1	1	Annie-2	Drilling Prelays	1x anchor handler within 2km of location DP/slow transit	24h	Anchor Handler
	7	Elanora-1			24h	Anchor Handler
2	1,2,3	Annie-2	Mooring	Moored Semi Sub idle (no noise) 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	24h	Ocean Onyx Anchor Handler x3
	7,8,9	Elanora-1			24h	Ocean Onyx Anchor Handler x3
3	4	Annie-2	MODU Drilling	Anchored MODU Drilling	24h	Ocean Onyx
	10	Elanora-1	MODU Drilling	Anchored MODU Drilling	24h	Ocean Onyx
4	4,5	Annie-2	MODU Drilling + OSV Under Standby	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (under minimal thrust)	24h	Ocean Onyx Anchor Handler
	10,11	Elanora-1			24h	Ocean Onyx Anchor Handler
5	4,5,6	Annie-2	MODU Drilling Operations with Standby OSV and resupply	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (under minimal thrust) 1x anchor Handler at rig doing resupply (under DP)	MODU: 24hr OSV Standby: 24h OSV Resupply: 8h	Ocean Onyx Anchor Handler x2
	10,11,12	Elanora-1			MODU: 24hr OSV Standby: 24h OSV Resupply: 8h	Ocean Onyx Anchor Handler x2
6	13,14,15	Between Annie-2 & Casino-5	Pipeline/Umbilical installation (ISV) Annie EHU	Laying Pipes and umbilicals – 600 m/hr	24h	ISV
7	16	Annie-2	Installation (DSV + HRV)	DSV + HRV stationary on location	24h	DSV+HRV
8†	10,11,12, 13,14,15	Between Annie-2 & Casino-5, with Elanora-1	MODU Drilling Operations, Standby OSV, OSV resupply and Pipeline/Umbilical installation (ISV) Annie EHU†	Anchored MODU Drilling 1x Anchor Handler on standby within 2km (under minimal thrust) 1x anchor Handler at rig doing resupply (under DP) & Laying Pipes and umbilicals – 600 m/hr	MODU: 24hr OSV Standby: 24h OSV Resupply: 8h Pipelay: 24h	Ocean Onyx Anchor Handler x2 ISV
9	17	Annie-2	MODU on DP	MODU on DP	24h	Transocean Equinox
	18	Elanora-1				
10	1,2,3,17	Annie-2	Mooring with MODU on DP	MODU on DP 1x anchor handler on bridle 2x anchor handle within 2km of location (hooking up anchors)	24h	Transocean Equinox Anchor Handler x3
	7,8,9,18	Elanora-1				

† This scenario is a combination of Scenario 5 at Elanora-1 and Scenario 6 to represent concurrent operations.

2. Noise Effect Criteria

To assess the potential effects of a sound-producing activity, it is necessary to first establish exposure criteria (thresholds) for which sound levels may be expected to have an adverse effect on animals. Whether acoustic levels might injure or disturb marine fauna is an active research topic. Since 2007, several expert groups have developed SEL-based assessment approaches for evaluating auditory injury, with key works including Southall et al. (2007), Finneran and Jenkins (2012a), Popper et al. (2014), United States National Marine Fisheries Service (NMFS 2018), Southall et al. (2019), and NMFS (2024). The number of studies that investigate the level of behavioural disturbance to marine fauna by anthropogenic sound has also increased substantially.

Two sound level metrics, SPL and SEL, are commonly used to evaluate non-impulsive noise and its effects on marine life. In this report, the duration of the SEL accumulation is defined as integrated over a 24-hour period. Appropriate subscripts indicate any frequency weighting applied (see Appendix 0). The acoustic metrics in this report reflect the ANSI and ISO standards for acoustic terminology, ANSI S1.1 (S1.1-2013) and ISO 18405:2017 (2017).

The following thresholds and guidelines for this study were chosen because they represent the best available science:

- Frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from NMFS (2024) for the onset of temporary threshold shift (TTS) and permanent threshold shift (PTS) in marine mammals for non-impulsive sound sources. PTS is a form of auditory injury as it is referred to in NMFS (2024) (using acronym AUD INJ), however in this report for consistency with previous work the term PTS is used.
- Marine mammal behavioural threshold based on the current US National Oceanic and Atmospheric Administration (NOAA) (2024) criterion for marine mammals of 120 dB re 1 µPa (SPL; L_p) for non-impulsive sound sources.
- Sound exposure guidelines for fish, fish eggs, and larvae (Popper et al. 2014).
- Frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from (Accomando et al. 2025) for the onset of temporary threshold shift (TTS) and permanent threshold shift (PTS) (a form of auditory injury referred to as AINJ in Accomando et al. (2025)) in sea turtles.

Section 2.1, along with Appendices A.3 and A.4, expand on the relevant thresholds, guidelines, and sound levels applicable to marine mammals. Section 2.2 expands on the guidelines for fish and sea turtles.

2.1. Marine Mammals

The criteria applied in this study to assess possible effects of non-impulsive noise sources on marine mammals are summarised in Table 7. Cetaceans and otariids were identified as the marine mammals requiring assessment. As discussed within Accomando et al. (2025) and NMFS (2024), intense noise exposures can cause auditory injury (represented by either AUD INJ or AINJ) without PTS occurring. In this report, the terms PTS and auditory injury can be considered to be used interchangeably, however it is acknowledged that auditory injury may occur without PTS. Details on thresholds related to auditory threshold shifts or hearing loss and behavioural response are provided in Appendix A.3, with frequency weighting explained in detail in Appendix A.4.

Table 7. Criteria for effects of non-impulsive noise exposure, including vessel noise, for marine mammals: unweighted SPL and weighted SEL_{24h} thresholds.

Hearing group	NOAA (2024)	NMFS (2024)	
	Behaviour	TTS onset thresholds (received level)	PTS onset thresholds (received level)
	SPL (L_p; dB re 1 µPa)	Weighted SEL24h (LE,24h; dB re 1 µPa²·s)	Weighted SEL24h (LE,24h; dB re 1 µPa²·s)
Low-frequency (LF) cetaceans	120	177	197
High-frequency (HF) cetaceans		181	201
Very High-frequency (VHF) cetaceans		161	181
Otariid Seals		179	199

L_p denotes sound pressure level and has a reference value of 1 µPa.
L_E denotes cumulative sound exposure over a 24 h period and has a reference value of 1 µPa²·s.

2.1.1. Behavioural Response

The NOAA continuous noise criterion was selected for this assessment because it represents the most commonly applied behavioural response criterion by regulators. The distances at which behavioural responses could occur are therefore determined by areas ensonified above an unweighted SPL of 120 dB re 1 µPa (NOAA 2024). Appendix A.3 provides more information about the development of this criterion.

2.1.2. Injury and Hearing Sensitivity Changes

There are two categories of auditory threshold shifts or hearing loss: temporary threshold shift (TTS), a temporary reduction in an animal's hearing sensitivity as the result of receptor hair cells in the cochlea becoming fatigued; and permanent threshold shift (PTS), a physical injury to an animal's hearing organs.

To assist in assessing the potential for effect on marine mammals, this report applies the criteria recommended by NMFS (2024), considering both TTS and PTS (see Table 7). Appendix A.3 provides more information about the NMFS (2024) criteria.

2.2. Fish, Sea Turtles, Fish Eggs, and Fish Larvae

In 2006, the Working Group on the Effects of Sound on Fish and Turtles was formed to continue developing noise exposure criteria for fish and sea turtles based on work began by a NOAA panel two years earlier. The Working Group developed guidelines with specific thresholds for different levels of effects for several species groups (Popper et al. 2014). The guidelines define quantitative thresholds for three types of immediate effects:

- Mortality, including injury leading to death;
- Recoverable injury, including injuries unlikely to result in mortality, such as hair cell damage and minor haematoma;
- TTS.

Masking and behavioural effects can be assessed qualitatively, by assessing relative risk rather than by specific sound level thresholds. However, as these depend upon activity-based subjective ranges,

these effects are not addressed in this report, and are included in Table 8 for completeness only. Because the presence or absence of a swim bladder has a role in hearing, fish susceptibility to injury from noise exposure depends on the species and the presence and possible role of a swim bladder in hearing. Thus, different thresholds were proposed for fish without a swim bladder (also appropriate for sharks), fish with a swim bladder not used for hearing, and fish that use their swim bladders for hearing. Sea turtles, fish eggs, and fish larvae are considered separately.

Table 8 lists the relevant effects thresholds from Popper et al. (2014) for shipping and continuous noise. Some evidence suggests that fish sensitive to acoustic pressure show a recoverable loss in hearing sensitivity, or injury when exposed to high levels of noise (Scholik and Yan 2002, Amoser and Ladich 2003, Smith et al. 2006); this is reflected in the SPL thresholds for fish with a swim bladder involved in hearing (shaded cells in Table 8). Accomando et al. (2025) presented revised thresholds for sea turtle TTS and PTS onset from continuous noise sources, considering frequency weighted SEL, which have been applied in this study (Table 9).

Table 8. Criteria for vessel noise exposure for fish, adapted from Popper et al. (2014).

Type of animal	Mortality and Potential mortal injury	Impairment			Behaviour
		Recoverable injury	TTS	Masking	
Fish: No swim bladder (particle motion detection)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: Swim bladder not involved in hearing (particle motion detection)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: Swim bladder involved in hearing (primarily pressure detection)	(N) Low (I) Low (F) Low	170 dB SPL for 48 h	158 dB SPL for 12 h	(N) High (I) High (F) High	(N) High (I) Moderate (F) Low
Sea Turtles	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) High (I) Moderate (F) Low
Fish eggs and fish larvae	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low	(N) Moderate (I) Moderate (F) Low

Sound pressure level dB re 1 µPa.
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.

Table 9. Acoustic effects of continuous noise on sea turtles, weighted SEL_{24h}, Accomando et al. (2025).

TTS onset thresholds (received level)	PTS onset thresholds (received level)
Weighted SEL_{24h} ($L_{E,24h}$; dB re 1 µPa²s)	Weighted SEL_{24h} ($L_{E,24h}$; dB re 1 µPa²s)
178	198

L_E denotes cumulative sound exposure over a 24 h period and has a reference value of 1 µPa²s.

3. Methods and Parameters

The modelled sites for the operations considered in this study were located on the continental shelf of south-eastern Australian (refer to wide regional bathymetry in Appendix B.1.1). The modelled sites were situated in water depths of approximately 56 – 77 m and represent or are considered representative of Amplitude Energy's Otway activity locations.

To allow for operational flexibility, the sound speed profile considered for modelling was selected through a sensitivity analysis considering all months. The month of August was found to be the most favourable for sound propagation and was selected for modelling. Additional detail can be found in Appendix B.1.2.

The seabed beneath the modelled sites will likely consist of variably cemented calcarenite (Port Campbell Limestone), for some sites a thin veneer of overlying coarse sand on top of the variably cemented calcarenite may be present. The geologic and geoacoustic profiles of the seabed were generated using lithographic descriptions from geotechnical and geophysical reports supplied by the client and considering previous underwater acoustic modelling and measurement studies. Appendix B.1.3 provides additional detail.

The following sections provided a description of the inputs used for this underwater noise modelling study. The sections are divided into subsections detailing the source inputs for the MODU, AHTS, ISV and DSV (Section 3.1) with Sections 3.2–3.3 providing details on the applied modelling techniques and model configuration information.

3.1. Vessel and Drilling Noise Sources

For the MODU on DP, MODU Drilling, AHTS on DP, AHTS standby transiting, the ISV conducting pipelay operations and the DSV and HRV on DP, Figure 2 presents a summary plot of considered source spectra for comparison purposes; additional detail on the sources is provided in Sections 3.1.1–3.1.2.3.

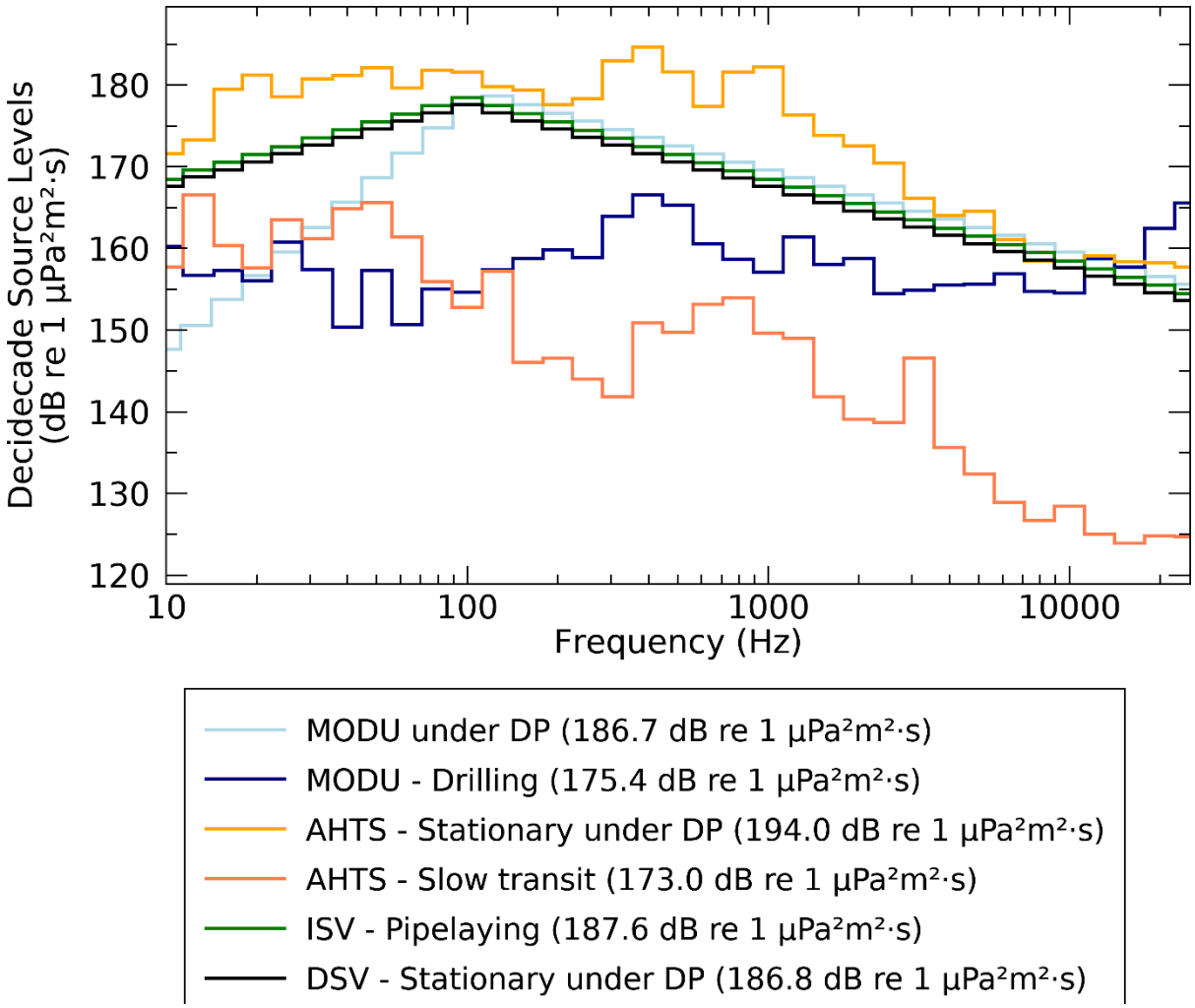

Figure 2. Source level (SL) spectra (in decidecade frequency-band) for all sound sources.

3.1.1. Mobile Offshore Drilling Unit (MODU)

The MODU, or semi-submersible platform, considered in this study is likely similar to the *Transocean Equinox*. While in operation, it will be held in position via anchors and chains, as opposed to using thrusters. Underwater sound from the MODU while drilling is expected to originate primarily from onboard equipment vibrations, while a smaller portion of the sound is expected to be transmitted directly into the water via the rotating drill string (Austin et al. 2018). Since the dominant vibration sources (e.g. pumps, generators, and machinery) are located on or below the main deck of the platform, the modelled depth of the point source representing the MODU was set to 11.6 m.

For drilling operations, the *Ocean Onyx* has been considered as a representative MODU for the *Transocean Equinox*. The *Ocean Onyx* (Figure 3) was measured by JASCO while anchored and drilling (McPherson et al. 2021), and had a broadband (10 Hz to 31 kHz) source level of 175.4 dB re 1 µPa m.

Figure 3. *Ocean Onyx* semi-submersible platform.

3.1.2. Vessel Radiated Noise

Underwater sound that radiates from vessels is produced mainly by propeller and thruster cavitation, with a smaller fraction of noise produced by sound transmitted through the hull, such as by engines, gearing, and other mechanical systems. Sound levels tend to be the highest when thrusters are used to position the vessel and when the vessel is transiting at high speeds. A vessel's sound signature depends on the vessel's size, power output, propulsion system (e.g., conventional propellers vs. Voith Schneider propulsion), and the design characteristics of the given system (e.g., blade shape and size). A vessel produces broadband acoustic energy with most of the energy emitted below a few kilohertz. Sound from onboard machinery, particularly sound below 200 Hz, dominates the sound spectrum before cavitation begins (Spence et al. 2007).

3.1.2.1. MODU under DP

While the MODU is positioning and anchors are being setup it is expected to be under DP where the primary source of noise is expected to originate from thrusters. Estimates of the source levels for the MODU is based on the *Transocean Equinox* from Woodside Energy Limited (2024). This had a broadband (10 Hz to 25 kHz) source level of 186.7 dB re 1 µPa m.

3.1.2.2. Anchor Handling Tug Supply (AHTS)

At this stage, the exact vessel specifications as well as the precise operational scenarios are not known. As such, estimates of the source levels for the Anchor Handling Tug Supply (AHTS) operations were based on a generic design AHTS vessel. The AHTS was based on the Siem VS491 CD design AHTS vessel (Figure 4) and it's specifications (Siem Offshore 2010) were used to form a basis for vessel source level estimation and source depth for acoustic modelling purposes. The general specification of these vessels is that they have a bollard pull of 285-310 t, and an overall length, beam, and draft of 91.0 m, 22.0 m and 7.95 m respectively.

The measured monopole source levels (MSLs) and spectra for the AHTS were taken from McPherson et al. (2021). For scenarios where the AHTS was under dynamic positioning (DP), the spectra from Section 5.5.2 in McPherson et al. (2021) were used.

Figure 4. Photo of an Anchor Handling Tug Supply (AHTS) vessel (Siem Offshore 2010).

3.1.2.3. Infield Support Vessel (ISV) and Dive Support Vessel (DSV)

As with the AHTS, at this stage the exact vessel specifications are not known. As such, estimates of the source levels for the ISV and DSV were based on a generic source spectrum and scaled based on thruster power comparisons.

3.1.2.3.1. Generic Offshore Vessel Source Spectrum

At the time of this study, the ISV and DSV vessels to be used in the project were unconfirmed and generic source spectrum used the estimate of the acoustic source levels for the ISV and DSV. These were estimated by scaling the spectrum based on the maximum utilised thruster power. The modelled source levels or the ISV and DSV were adjusted using Equation (1).

$$\mathrm{SL} = \mathrm{SL}_{\mathrm{ref}} + 10\log_{10}\left(\frac{P}{P_{\mathrm{ref}}}\right) \quad (1)$$

Here the modelled broadband source level (SL) was estimated from the broadband source level of the generic source ($\mathrm{SL}_{\mathrm{ref}}$) and the utilised thruster powers of the modelled ISV (or DSV) and generic sources (P and P_{ref}, respectively). The generic source spectrum for the was determined by the method described in Appendix B.2.

3.1.2.3.2. Infield Support Vessel (ISV)

The estimates of the source levels for the ISV were based on a proxy vessel, the Skandi Acergy (Figure 5) which has a total installed thruster power rating of 16,840 kW, and overall length, beam and draft of 156.9 m, 27.0 m and 8.5 m respectively. The propulsion system of the Skandi Acergy contains the following:

- 2 x 1,920 kW tunnel thrusters,
- 2 x 1,500 kW retractable azimuths,
- 2 x 3,000 kW contra-rotating azimuths,

- 1 x 4,000 kW shaft propeller + rudder.

However, while under DP the single rear main is not likely to be in use; therefore, for power scaling it was omitted. The total maximum thruster power while the ISV was on DP of 12,840 kW was used with Equation (1) for scaling.

Figure 5. Photo of the Skandi Acergy - proxy for an Infield Support Vessel (ISV).

3.1.2.3.3. Dive Support Vessel (DSV)

The estimates of the source levels for the ISV were based on a proxy vessel, the Skandi Singapore (Figure 6) which has a total installed thruster power rating of 10,500 kW, and overall length, beam and draft of 107.1 m, 21.0 m, and 6.6 m respectively. The propulsion system of the Skandi Singapore contains the following:

- 2 x 1500 kW bow tunnel thrusters,
- 1 x 1,500 kW retractable azimuth thruster,
- 2 x 3,000 kW stern azimuths thruster.

The total maximum thruster power while the DSV was on DP of 10,500 kW was used for with Equation (1) for scaling.

Figure 6. Photo of the Skandi Singapore proxy for a Dive Support Vessel (DSV).

3.2. Geometry and Modelled Regions

JASCO's Marine Operations Noise Model (MONM-BELLHOP; see Appendices B.3.2 and B.3.4) was used to predict the acoustic field at frequencies of 10 Hz to 25 kHz for all vessels. To supplement the MONM results, high-frequency results for propagation loss were modelled using Bellhop for frequencies from 1.26 to 25 kHz. The sound field modelling calculated propagation losses up to 80 km from the source, with a horizontal separation of 20 m between receiver points along the modelled radials. The sound fields were modelled with a horizontal angular resolution of $\Delta\theta = 2.5°$ for a total of N = 144 radial planes. Receiver depths were chosen to span the entire water column over the modelled areas, from 2 m to a maximum of 2600 m. To supplement the MONM results, high-frequency results for propagation loss were modelled using BELLHOP (Porter and Liu 1994) for frequencies from 1.25 to 10 kHz. The MONM and BELLHOP results were combined to produce results for the full frequency range of interest. For sites where the seabed geoacoustic model consisted of bare calcarenite, an additional broadband correction was applied to the results from MONM-BELLHOP to better account for the additional propagation loss associated with a limestone (calcarenite) seabed (see Appendix B.3.4).

To produce the maps of received sound level isopleths, and to calculate distances to specified sound level thresholds, the maximum-over-depth level was calculated at each sampling point within the modelled region. The radial grids of maximum-over-depth levels were then resampled (by linear triangulation) to produce a regular Cartesian grid. The contours and threshold ranges were calculated from these grids of the modelled acoustic fields.

3.3. Accumulated SEL

In this study, the sound sources were considered to be continuously operating with new sound energy constantly being introduced to the environment. The reported source levels are usually in terms of sound pressure levels (SPL), representing the average instantaneous acoustic level of a considered source. The evaluation of the cumulative sound field (i.e., in terms of SEL_{24h}) depends on the number of seconds of operation during the accumulation period.

For all stationary source (MODU and vessels), the SPL modelling results were converted to SEL by the duration of the measurement, which is appropriate for a non-impulsive noise source. As SEL was assessed over 24 h and for a stationary vessel over a day, the conversion from SPL was obtained by increasing the levels by $10*\log_{10}(T)$, where T is 86,400 (the number of seconds in 24 h). For scenarios where a vessel was transiting along a track a similar adjustment to the SPL was applied, however the time factor was determined based on the step size along the track and the vessel's speed. See Appendix B.2.2 for detail.

4. Results

The maximum-over-depth sound fields for the modelled scenarios are presented below in two formats: as tables of distances to sound levels and, where the distances are long enough, as contour maps showing the directivity and range to various sound levels.

For the results below, the distances to isopleths/thresholds were reported from either the centroid of several sources or from the most dominant single source. When an isopleth completely envelopes multiple sources the centroid was used. When several closed isopleths exist the most dominant source was used. Maps and are provided in Section 4.2 to assist in with contextualising tabulated distances.

4.1. Tabulated Results

Tables 10–13 present the maximum and 95% distances to SPL. The SPL sound footprints presented represent the instantaneous sound field and do not depend on time accumulation. Tables 14–17 present the maximum distances to frequency-weighted SEL_{24h} thresholds, as well as total ensonified area.

Table 10. *Annie-2, SPL*: Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) to sound pressure level (SPL) from most appropriate location for considered sources per scenario. Scenario descriptions are given in Table 5.

SPL (L_p; dB re 1 µPa)	Annie-2									
	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)
180	–	–	–	–	–	–	–	–	–	–
170[a]	–	–	0.02	0.02	–	–	–	–	0.03	0.03
160	–	–	0.10	0.10	–	–	–	–	0.11	0.11
158[b]	–	–	0.12	0.11	–	–	–	–	0.13	0.12
150	–	–	0.36	0.34	0.02	0.02	0.02	0.02	0.37	0.34
140	0.03	0.03	0.81	0.76	0.11	0.10	0.11	0.10	0.84	0.77
130	0.14	0.13	3.16	2.71	0.42	0.39	0.42	0.39	2.76	2.43
120[c]	0.44	0.41	7.87	7.32	1.10	1.02	1.13	1.03	7.46	7.11
110	0.96	0.92	21.3	18.5	3.54	3.24	4.43	3.99	20.9	18.4
100	2.40	2.13	79.9	61.8	8.30	7.64	9.30	8.18	79.6	61.9

[a] 48 h threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al. 2014).
[b] 12 h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al. 2014).
[c] Threshold for LF, HF & VHF-cetacean behavioural response to non-impulsive noise (NOAA 2024).
A dash indicates the level was not reached within the limits of the modelled resolution (20 m).

Table 11. *Elanora-1, SPL*: Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) to sound pressure level (SPL) from most appropriate location for considered sources per scenario. Scenario descriptions are given in Table 5.

SPL (L_p; dB re 1 µPa)	Elanora-1									
	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)
180	–	–	–	–	–	–	–	–	–	–
170[a]	–	–	–	–	–	–	–	–	0.03	0.03
160	–	–	0.06	0.06	0.02	0.02	0.02	0.02	0.07	0.07
158[b]	–	–	0.12	0.12	0.02	0.02	0.02	0.02	0.13	0.13
150	0.02	0.02	0.41	0.39	0.02	0.02	0.02	0.02	0.42	0.40
140	0.03	0.03	1.64	1.53	0.07	0.07	0.07	0.07	1.64	1.54
130	0.17	0.16	6.53	5.88	0.50	0.47	0.50	0.48	6.20	5.77
120[c]	0.75	0.72	21.7	18.8	1.89	1.79	2.91	2.58	21.7	18.7
110	2.09	1.97	81.3	61.2	8.06	7.28	8.83	7.83	81.2	62.4
100	6.31	5.78	>80.0	/	31.4	27.7	31.9	28.1	>80.0	/

[a] 48 h threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al. 2014).
[b] 12 h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al. 2014).
[c] Threshold for LF, HF & VHF-cetacean behavioural response to non-impulsive noise (NOAA 2024).
A dash indicates the level was not reached within the limits of the modelled resolution (20 m).
A slash indicates that $R_{95\%}$ radius to threshold is not reported when the R_{max} is greater than the maximum modelling extent.

Table 12. *Pipeline/Umbilical Lay between Annie-2 and Casino-5, ISV, and drilling operations at Elanoa-1, SPL*: Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) to sound pressure level (SPL) from most appropriate location for considered sources per scenario. Scenario descriptions are given in Table 5.

SPL (L_p;dB re 1 µPa)	Annie-2 and Casino-5						Annie-2		Annie-2, Casino-5, and Elanora-1	
	Scenario 6						Scenario 7		Scenario 8[d]	
	Site 13		Site 14		Site 15					
	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)
180	–	–	–	–	–	–	–	–	0.02	0.02
170[a]	–	–	–	–	–	–	–	–	0.03	0.03
160	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.07	0.07
158[b]	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.13	0.13
150	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.15	0.42	0.40
140	0.48	0.43	0.48	0.45	0.69	0.66	0.47	0.44	1.64	1.54
130	1.14	1.07	0.99	0.94	2.08	1.96	0.98	0.93	6.27	5.83
120[c]	2.72	2.61	2.59	2.33	5.97	5.41	2.56	2.30	30.7	28.2
110	7.34	7.11	6.61	6.09	20.2	18.2	6.47	6.08	92.0	69.8
100	21.3	17.9	16.8	15.4	63.7	52.0	17.2	15.6	>80.0	\

[a] 48 h threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al. 2014).
[b] 12 h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al. 2014).
[c] Threshold for LF, HF & VHF-cetacean behavioural response to non-impulsive noise (NOAA 2024).
[d] Longest distance to threshold along the entire pipelay route is shown. See Figures 21–23 for contour maps at three points along pipelay route.
A dash indicates the level was not reached within the limits of the modelled resolution (20 m).
A slash indicates that $R_{95\%}$ radius to threshold is not reported when the R_{max} is greater than the maximum modelling extent.

Table 13. *Vessel Scenarios for MODU under DP, SPL*: Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) to sound pressure level (SPL) from most appropriate location for considered sources per scenario. Scenario descriptions are given in Table 5.

SPL (L_p;dB re 1 µPa)	Annie-2		Elanora-1		Annie-2		Elanora-1	
	Scenario 9				Scenario 10			
	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)
180	–	–	–	–	–	–	–	–
170[a]	–	–	–	–	–	–	–	–
160	0.03	0.03	0.03	0.03	0.10	0.10	0.06	0.06
158[b]	0.04	0.04	0.04	0.04	0.12	0.11	0.13	0.12
150	0.17	0.16	0.14	0.13	0.60	0.54	0.67	0.60
140	0.55	0.53	0.83	0.79	2.05	0.96	2.08	1.79
130	1.84	1.71	3.15	2.93	3.50	2.98	7.61	6.32
120[c]	5.36	4.83	12.0	11.3	8.02	7.46	24.8	21.7
110	12.9	11.7	43.6	39.5	25.0	21.3	90.3	78.2
100	43.7	38.8	>80.0	\	>80.0	\	>80.0	\

[a] 48 h threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al. 2014).
[b] 12 h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al. 2014).
[c] Threshold for LF, HF & VHF-cetacean behavioural response to non-impulsive noise (NOAA 2024).
A dash indicates the level was not reached within the limits of the modelled resolution (20 m).
A slash indicates that $R_{95\%}$ radius to threshold is not reported when the R_{max} is greater than the maximum modelling extent.

Table 14. *Vessel Scenarios at Annie-2, SEL_{24h}:* Maximum (R_{max}) horizontal distances (in km) to frequency-weighted SEL_{24h} PTS and TTS thresholds based on NMFS (2024) and Accomando et al. (2025) from most appropriate location for considered sources per scenario and ensonified area (km^2).

Hearing group	Frequency-weighted SEL_{24h} threshold ($L_{E,24h}$; dB re 1 $\mu Pa^2 \cdot s$)	Annie-2									
		Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
		R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)
PTS											
LF cetaceans	197	–	–	0.40	0.43	0.03	/	0.03	/	0.27	0.17
HF cetaceans	201	–	–	0.03	/	–	–	–	–	–	–
VHF cetaceans	181	–	–	0.07	0.01	0.09	0.02	0.09	0.02	0.11	0.03
Otariid Seals	199	–	–	0.03	/	–	–	–	–	–	–
Sea turtles	198	–	–	0.29	0.23	–	–	–	–	0.13	0.04
TTS											
LF cetaceans	177	–	–	3.60	28.2	0.48	0.66	0.48	0.66	2.16	7.61
HF cetaceans	181	–	–	0.47	0.65	0.11	0.04	0.11	0.04	0.35	0.35
VHF cetaceans	161	–	–	0.59	1.06	0.64	1.23	0.64	1.23	0.69	1.44
Otariid Seals	179	–	–	0.44	0.57	0.10	0.03	0.10	0.03	0.33	0.29
Sea turtles	178	–	–	1.73	6.49	0.28	0.23	0.28	0.23	0.99	2.65

A dash indicates the level was not reached within the limits of the modelled resolution (20 m).
A slash indicates that the area is less than an area associated with the modelled resolution (0.0013 km^2).

Table 15. *Vessel Scenarios at Elanora-1, SEL_{24h}:* Maximum (R_{max}) horizontal distances (in km) to frequency-weighted SEL_{24h} PTS and TTS thresholds based on NMFS (2024) and Accomando et al. (2025) from most appropriate location for considered sources per scenario and ensonified area (km^2).

Hearing group	Frequency-weighted SEL_{24h} threshold ($L_{E,24h}$; dB re 1 $\mu Pa^2 \cdot s$)	Elanora-1									
		Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
		R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)
PTS											
LF cetaceans	197	–	–	0.50	0.56	0.03	/	0.05	/	0.22	0.12
HF cetaceans	201	–	–	0.04	/	–	–	–	–	–	–
VHF cetaceans	181	–	–	0.06	0.01	0.08	0.02	0.10	0.02	0.09	0.02
Otariid Seals	199	–	–	0.03	/	–	–	–	–	–	–
Sea turtles	198	–	–	0.31	0.22	–	–	–	–	0.10	0.02
TTS											
LF cetaceans	177	–	–	7.54	131	0.59	0.99	0.63	1.00	3.84	37.6
HF cetaceans	181	–	–	0.66	1.18	0.09	0.03	0.12	0.03	0.38	0.37
VHF cetaceans	161	–	–	0.81	2.02	0.79	1.92	0.81	1.92	0.88	2.37
Otariid Seals	179	–	–	0.56	0.85	0.08	0.02	0.10	0.02	0.34	0.29
Sea turtles	178	–	–	3.53	33.2	0.25	0.19	0.28	0.19	1.86	10.3

A dash indicates the level was not reached within the limits of the modelled resolution (20 m).
A slash indicates that the area is less than an area associated with the modelled resolution (0.0013 km^2).

Table 16. *Vessel Scenarios for Pipeline/Umbilical Lay between Annie-2 and Casino-5 and ISV at Annie-2, SPL*: Maximum (R_{max}) horizontal distances (in km) to frequency-weighted SEL_{24h} PTS and TTS thresholds based on NMFS (2024) and Accomando et al. (2025) from most appropriate location for considered sources per scenario and ensonified area (km²).

Hearing group	Frequency-weighted SEL_{24h} threshold ($L_{E,24h}$; dB re 1 µPa²·s)	Annie-2 and Casino-5		Annie-2		Annie-2, Casino-5, and Elanora-1	
		Scenario 6		Scenario 7		Scenario 8	
		R_{max} (km)	Area (km²)	R_{max} (km)	Area (km²)	R_{max} (km)	Area (km²)
PTS							
LF cetaceans	197	–	–	0.13	0.05	0.48	0.56
HF cetaceans	201	–	–	–	–	0.03	/
VHF cetaceans	181	–	–	0.05	0.01	0.12	0.03
Otariid Seals	199	–	–	–	–	0.03	/
Sea turtles	198	–	–	0.08	0.02	0.26	0.18
TTS							
LF cetaceans	177	0.63	11.5	0.94	2.53	7.50	148
HF cetaceans	181	–	–	0.17	0.09	0.90	1.20
VHF cetaceans	161	0.08	2.08	0.45	0.62	1.14	6.08
Otariid Seals	179	–	–	0.18	0.10	0.57	0.90
Sea turtles	178	0.37	7.71	0.78	1.77	3.47	41.8

A dash indicates the level was not reached within the limits of the modelled resolution (20 m).
A slash indicates that the area is less than an area associated with the modelled resolution (0.0013 km²).

Table 17. *Vessel Scenarios for MODU under DP, SPL*: Maximum (R_{max}) horizontal distances (in km) to frequency-weighted SEL_{24h} PTS and TTS thresholds based on NMFS (2024) and Accomando et al. (2025) from most appropriate location for considered sources per scenario and ensonified area (km²).

Hearing group	Frequency-weighted SEL_{24h} threshold ($L_{E,24h}$; dB re 1 µPa²·s)	Annie-2		Elanora-1		Annie-2		Elanora-1	
		Scenario 9				Scenario 10			
		R_{max} (km)	Area (km²)	R_{max} (km)	Area (km²)	R_{max} (km)	Area (km²)	R_{max} (km)	Area (km²)
PTS									
LF cetaceans	197	0.15	0.06	0.13	0.05	0.61	0.57	0.67	0.78
HF cetaceans	201	–	–	–	–	0.03	/	0.04	/
VHF cetaceans	181	0.07	0.01	0.05	0.01	0.07	0.03	0.06	0.02
Otariid Seals	199	–	–	–	–	0.03	/	0.03	/
Sea turtles	198	0.12	0.04	0.08	0.02	0.50	0.29	0.49	0.23
TTS									
LF cetaceans	177	1.73	8.50	2.85	23.9	3.88	39.7	7.92	176
HF cetaceans	181	0.24	0.17	0.19	0.12	0.71	0.88	0.88	1.45
VHF cetaceans	161	0.59	1.05	0.71	1.54	0.87	1.94	1.15	3.46
Otariid Seals	179	0.24	0.18	0.19	0.12	0.68	0.79	0.82	1.17
Sea turtles	178	1.31	4.73	2.20	13.1	2.26	12.4	4.45	55.5

A dash indicates the level was not reached within the limits of the modelled resolution (20 m).
A slash indicates that the area is less than an area associated with the modelled resolution (0.0013 km²).

4.2. Sound Field Maps

Maps of the estimated sound fields, threshold contours, and isopleths of interest for SPL and SEL_{24h} sound fields are presented for the modelled vessel scenarios. In some cases, the isopleths had several contours. This can occur as a result of the reflection of the sound field off the seafloor, creating an additional ring around the initial isopleth. The first isopleth is generally axially symmetric since it spreads without the influence of the bathymetry, while the second isopleth is more complex due to the interaction between the sound field and the seabed.

4.2.1. SPL Sound level Contour Maps

Maps of the estimated sound fields, threshold contours, and isopleths of interest for SPL and SEL_{24h} sound fields are presented for the Amplitude Energy Otway subsea noise modelling.

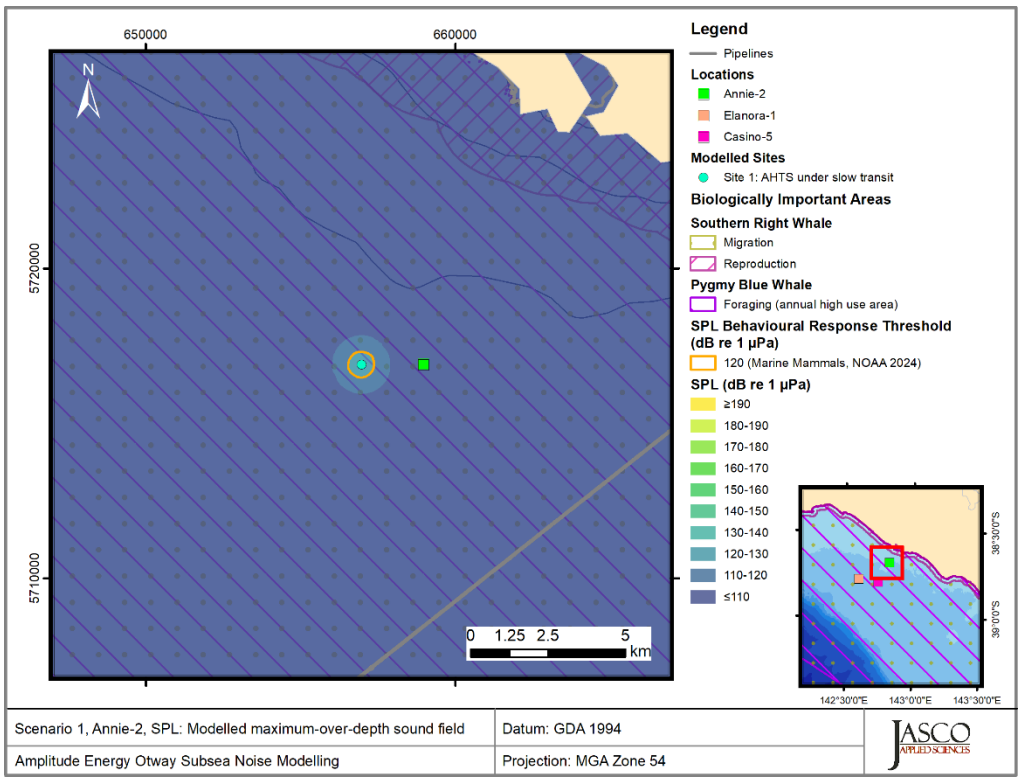

Figure 7. *Scenario 1, Drilling prelays, Annie-2, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

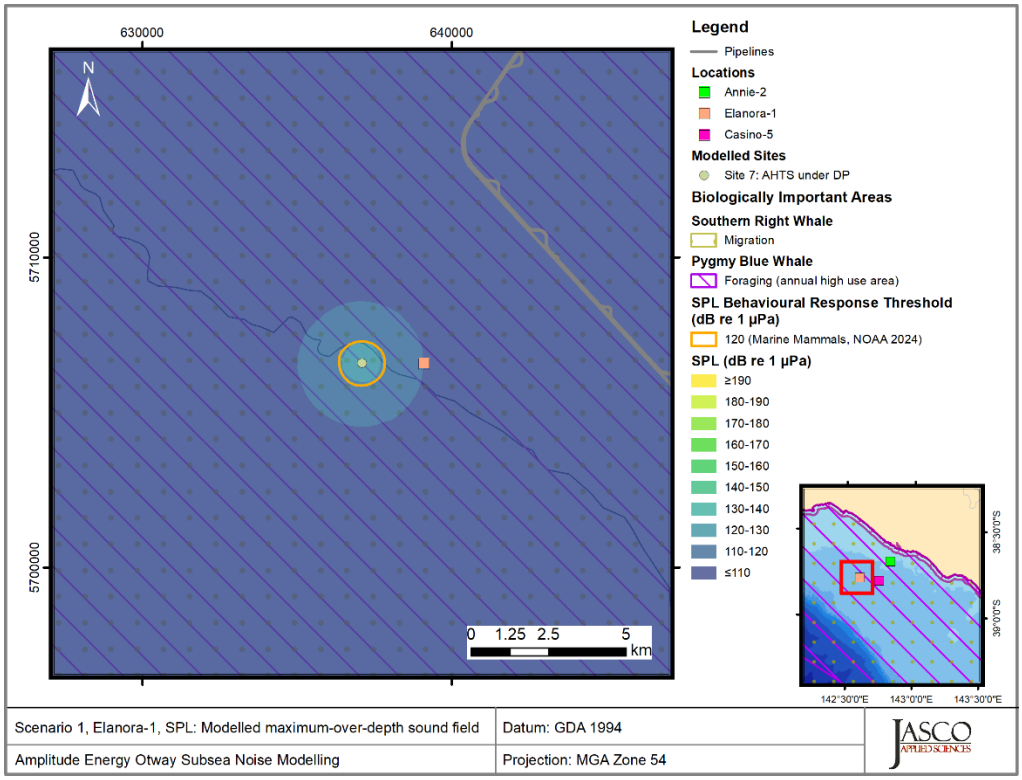

Figure 8. *Scenario 1, Drilling prelays, Elanora-1, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

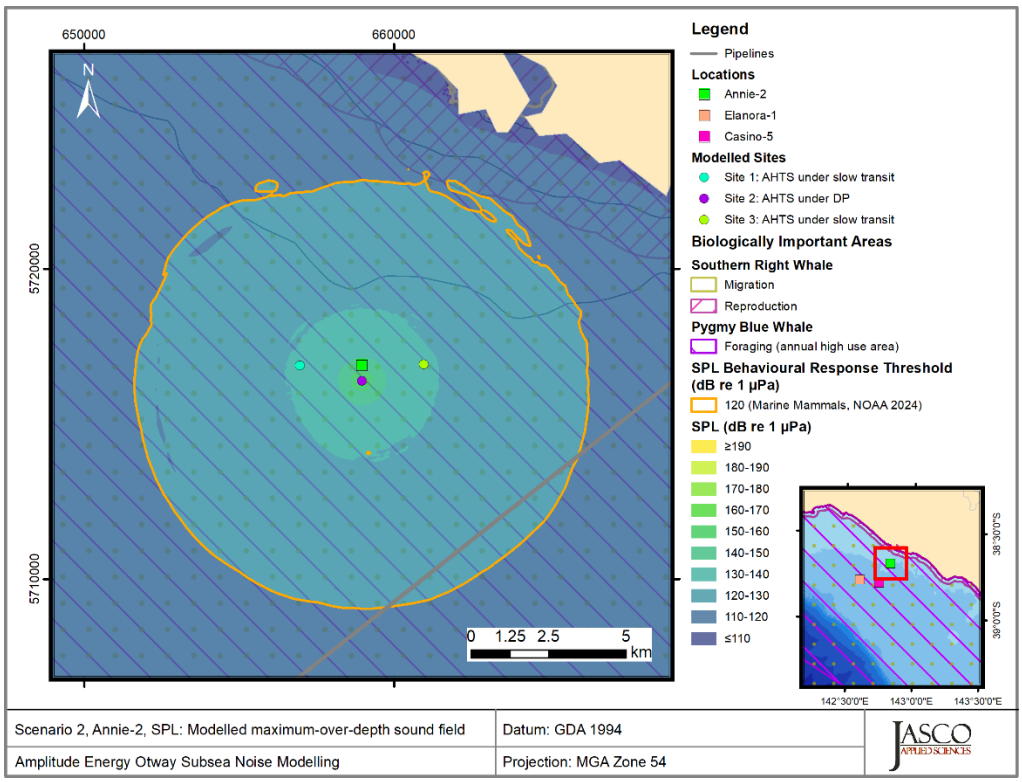

Figure 9. *Scenario 2, Mooring, Annie-2, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

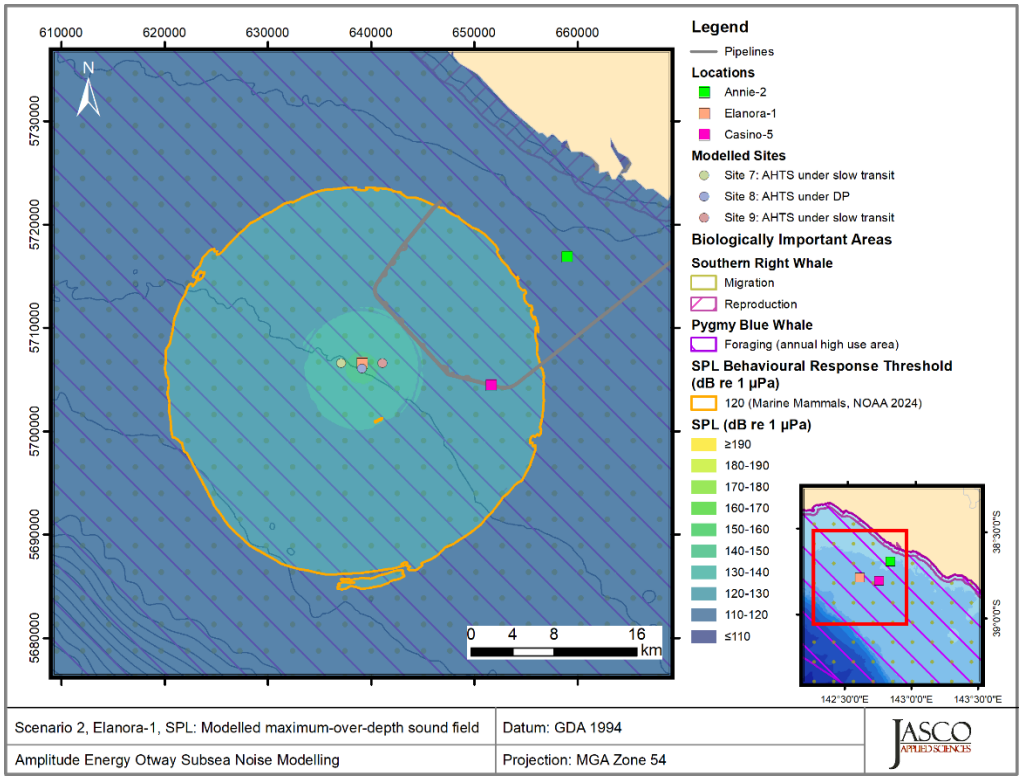

Figure 10. *Scenario 2, Mooring, Elanora-1, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

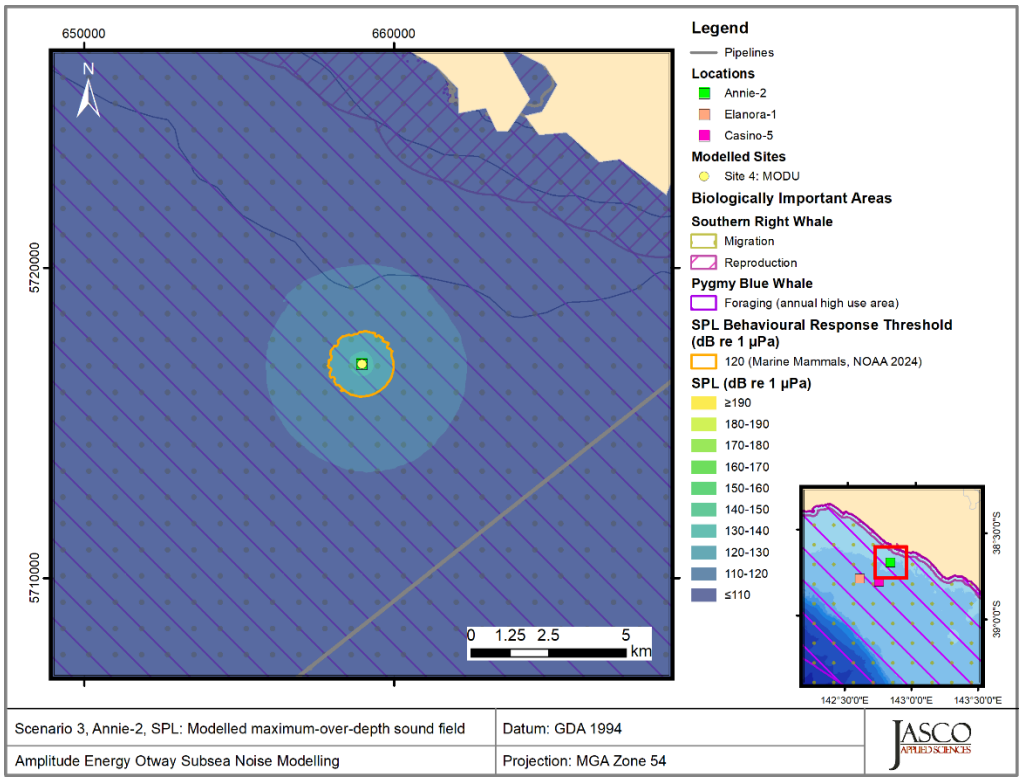

Figure 11. *Scenario 3, MODU Drilling, Annie-2, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

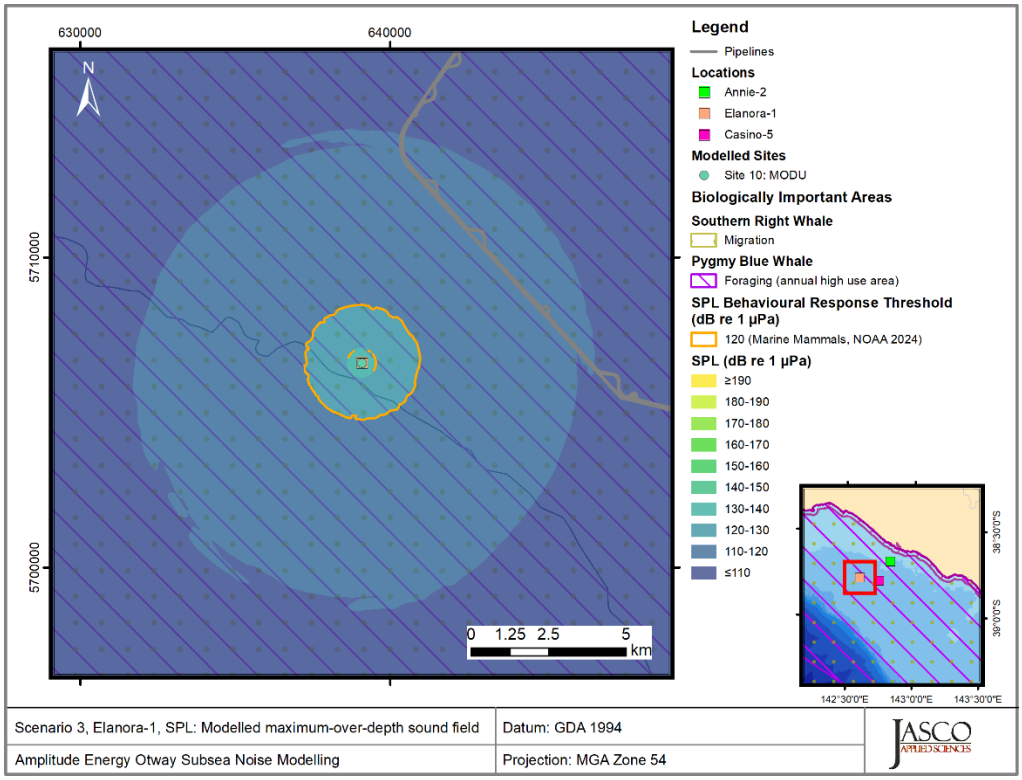

Figure 12. *Scenario 3, MODU Drilling, Elanora-1, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

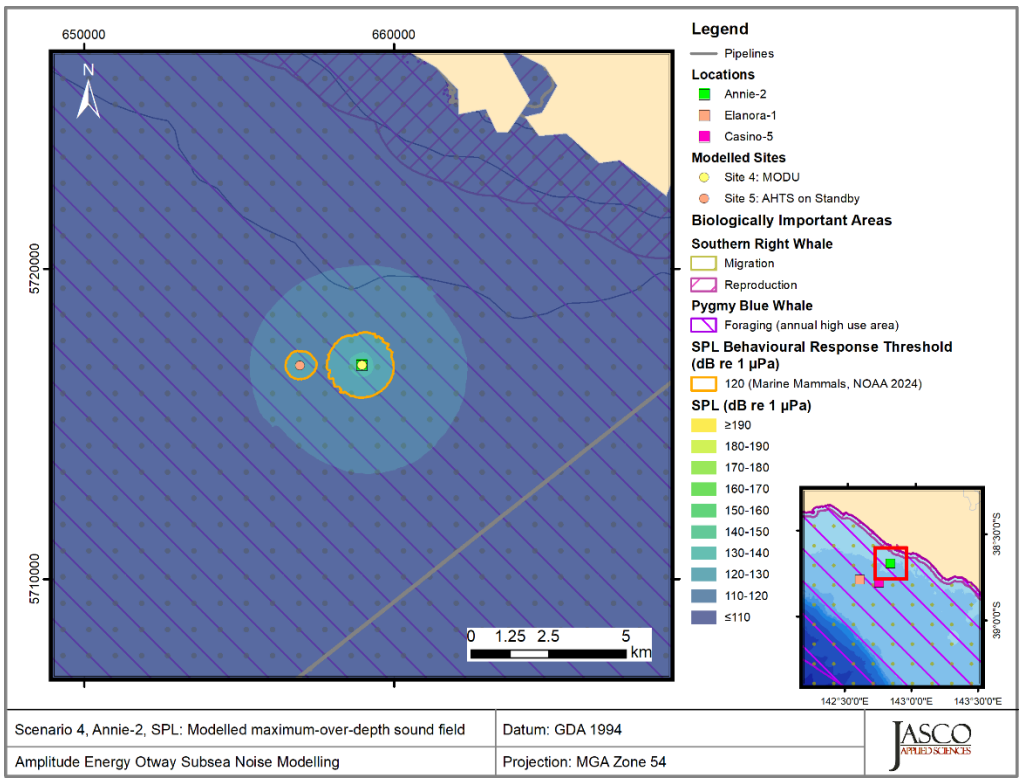

Figure 13. *Scenario 4, Drilling and standby OSV, Annie-2, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

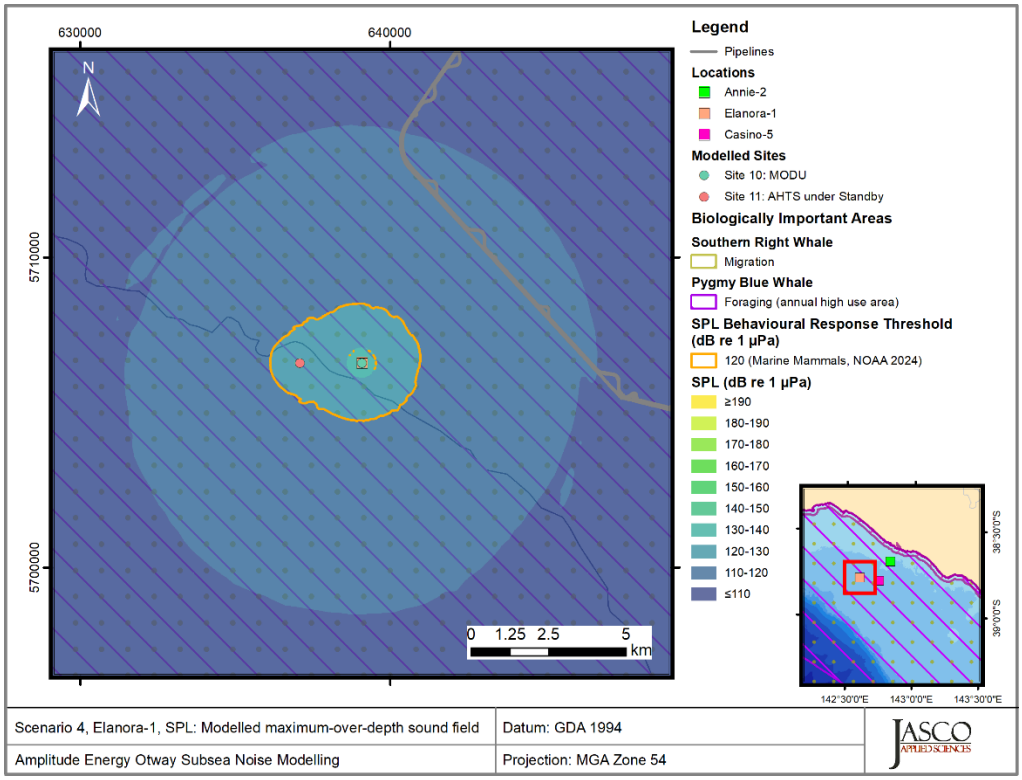

Figure 14. *Scenario 4, Drilling and standby OSV, Elanora-1, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

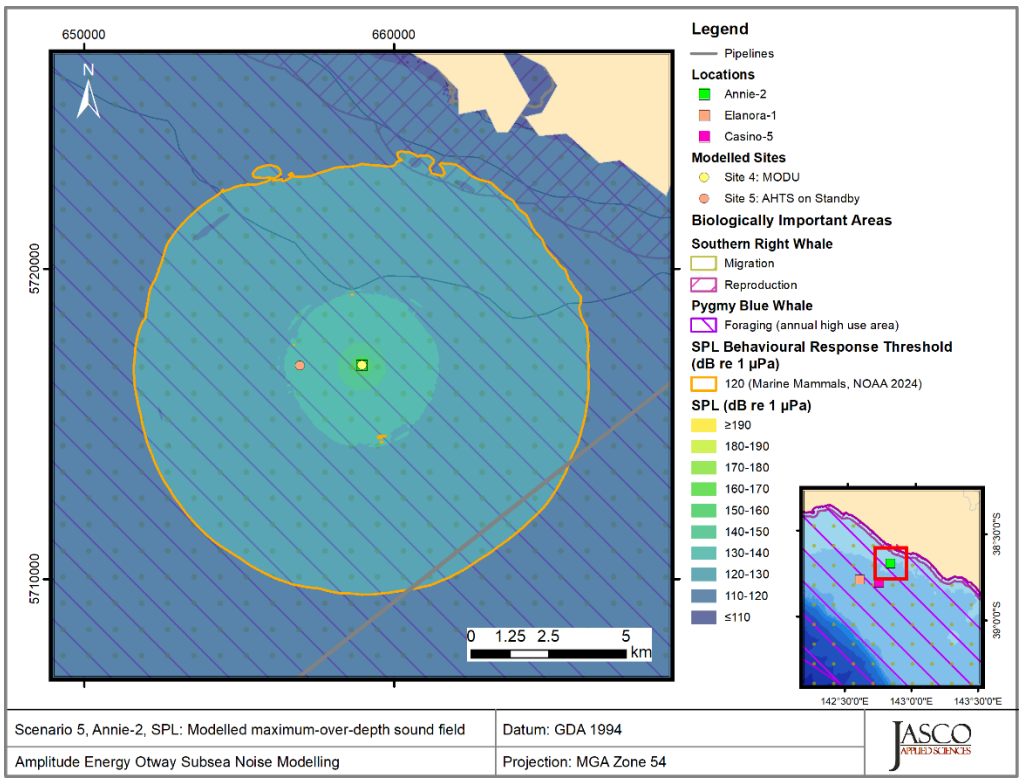

Figure 15. *Scenario 5, Drilling and standby OSV during resupply, Annie-2, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

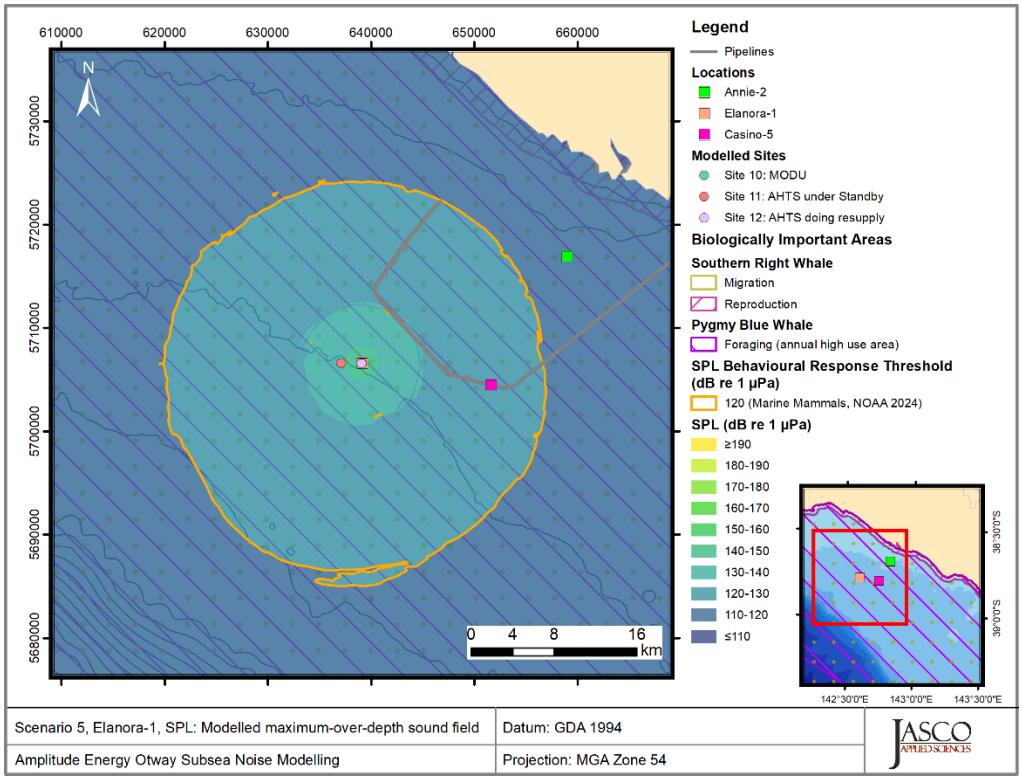

Figure 16. *Scenario 5, Drilling and standby OSV during resupply, Elanora-1, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

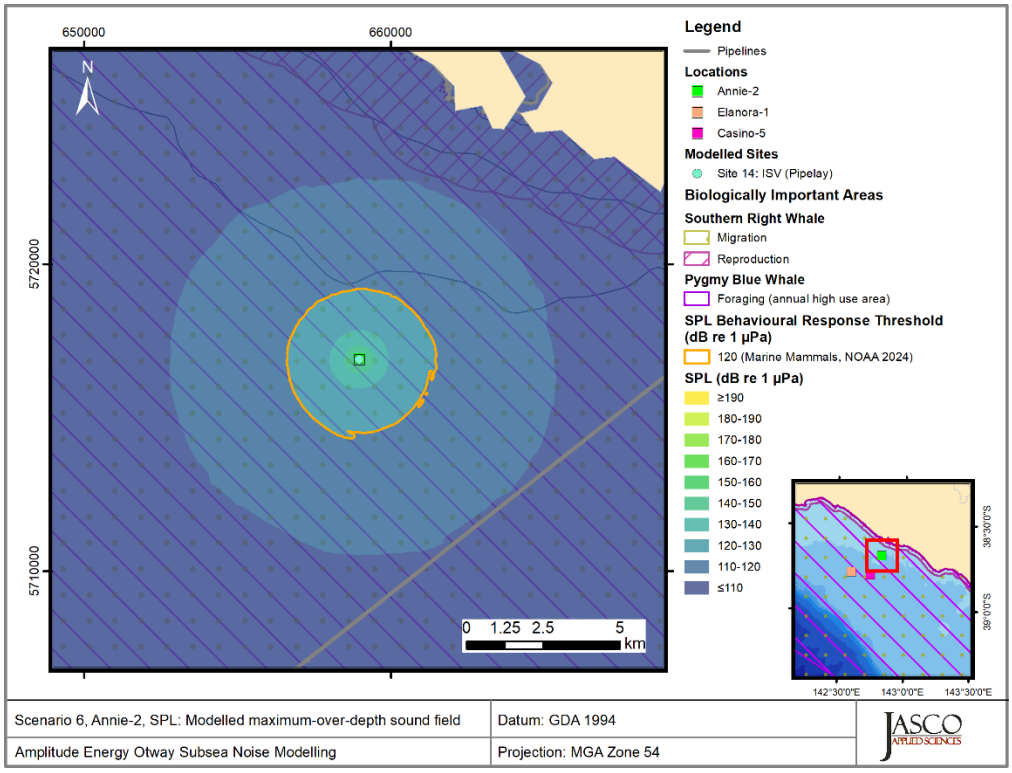

Figure 17. *Scenario 6, Pipelay installation – start, Annie-2, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

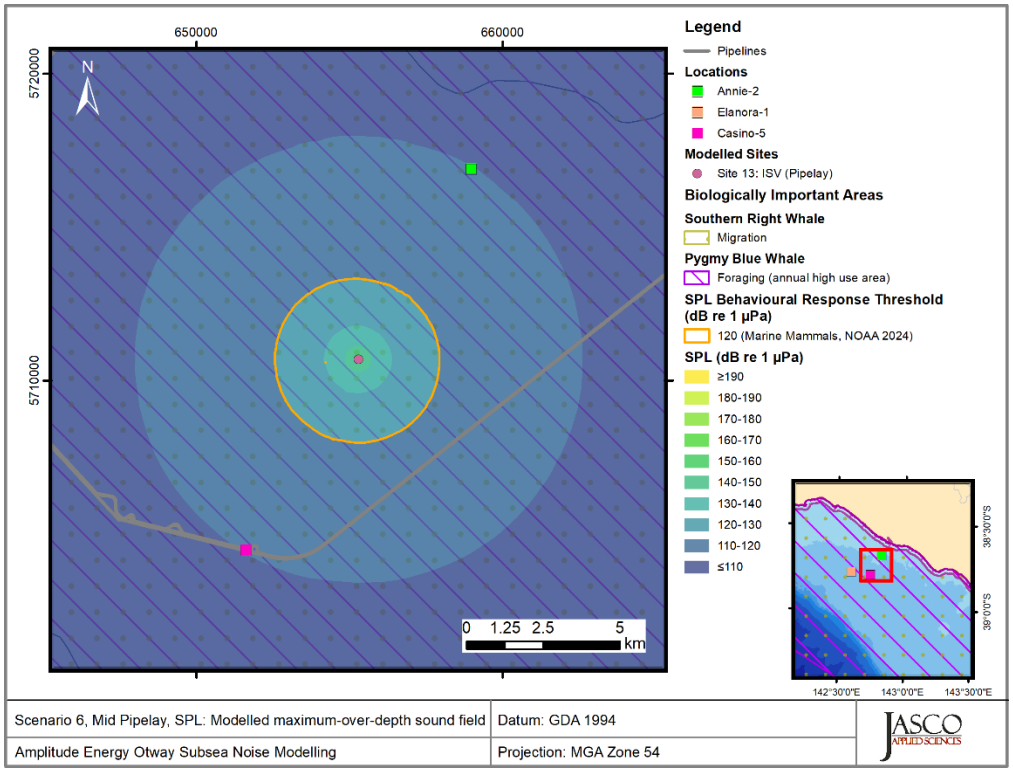

Figure 18. *Scenario 6, Pipelay installation – mid, Annie-2 and Casino-5, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

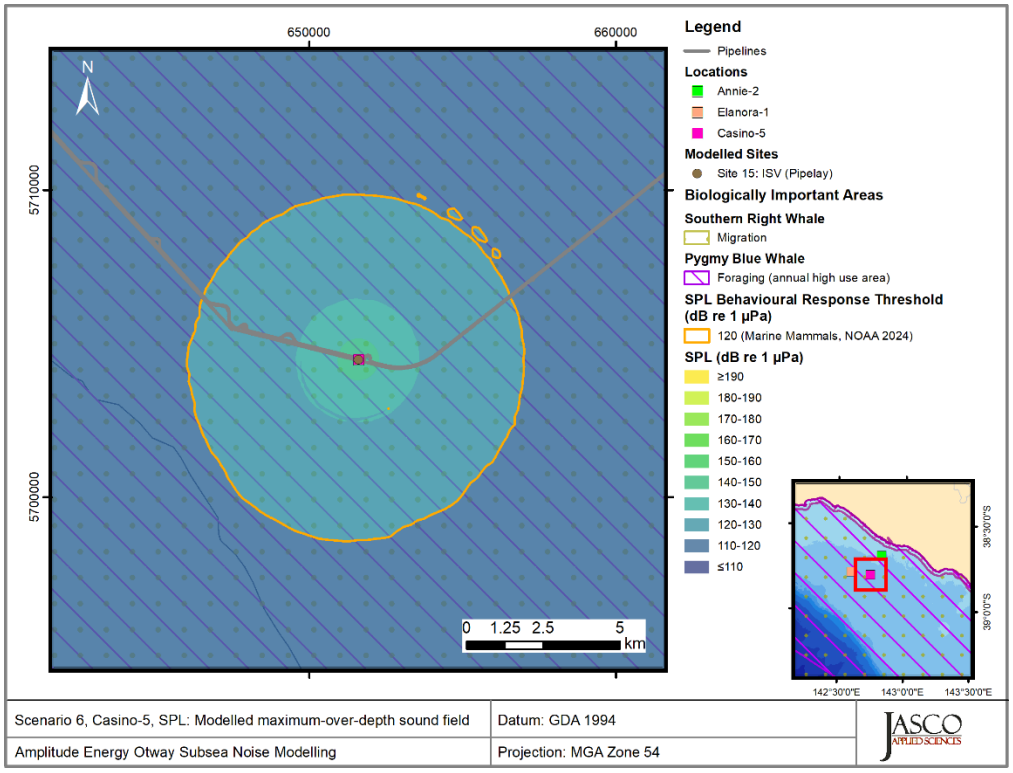

Figure 19. *Scenario 6, Pipelay installation – end, Casino-5, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

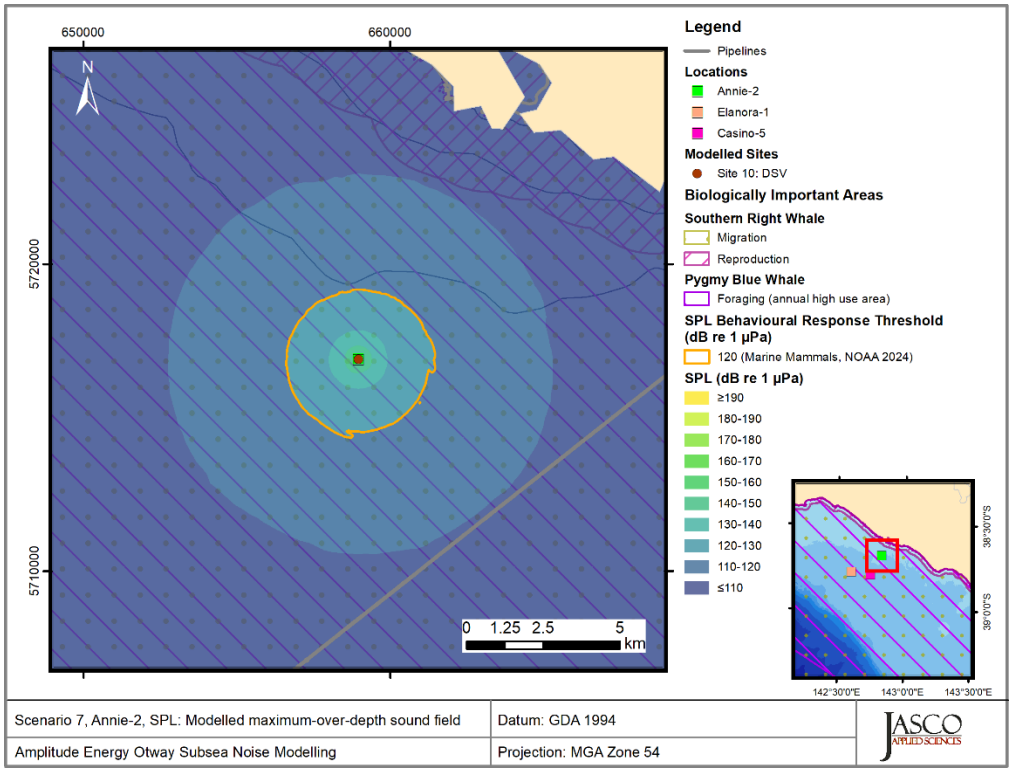

Figure 20. *Scenario 7, Installation, Annie-2, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

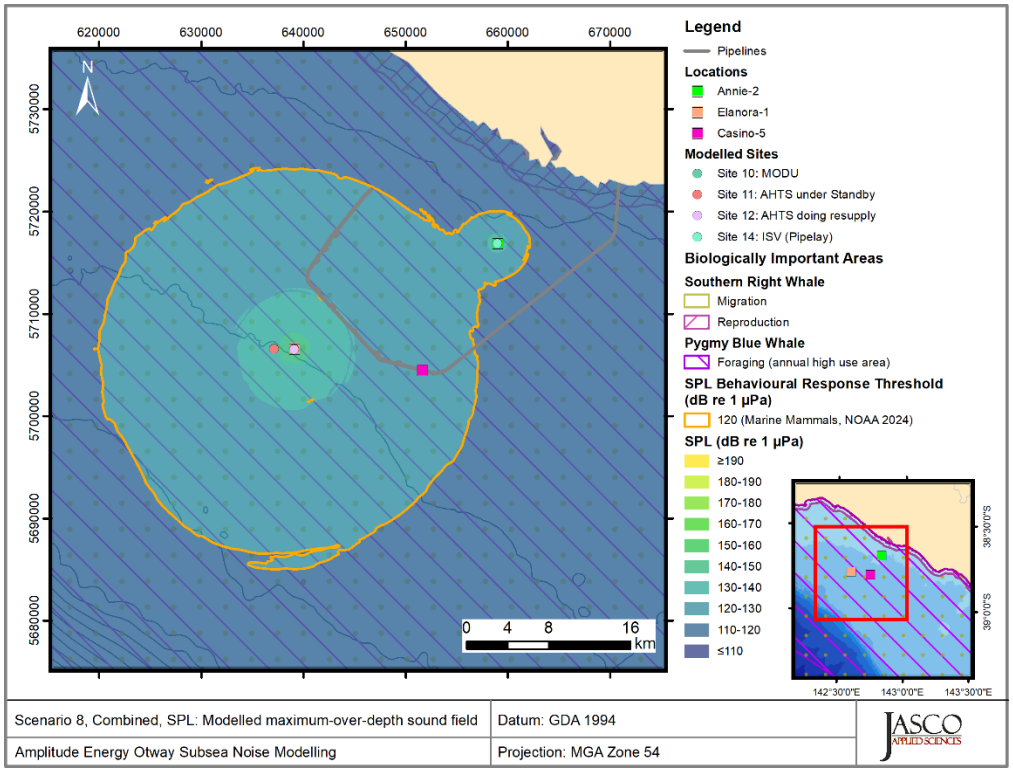

Figure 21. *Scenario 8, Drilling and standby OSV during resupply and pipelay – start, Elanora-1 and Casino-5, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

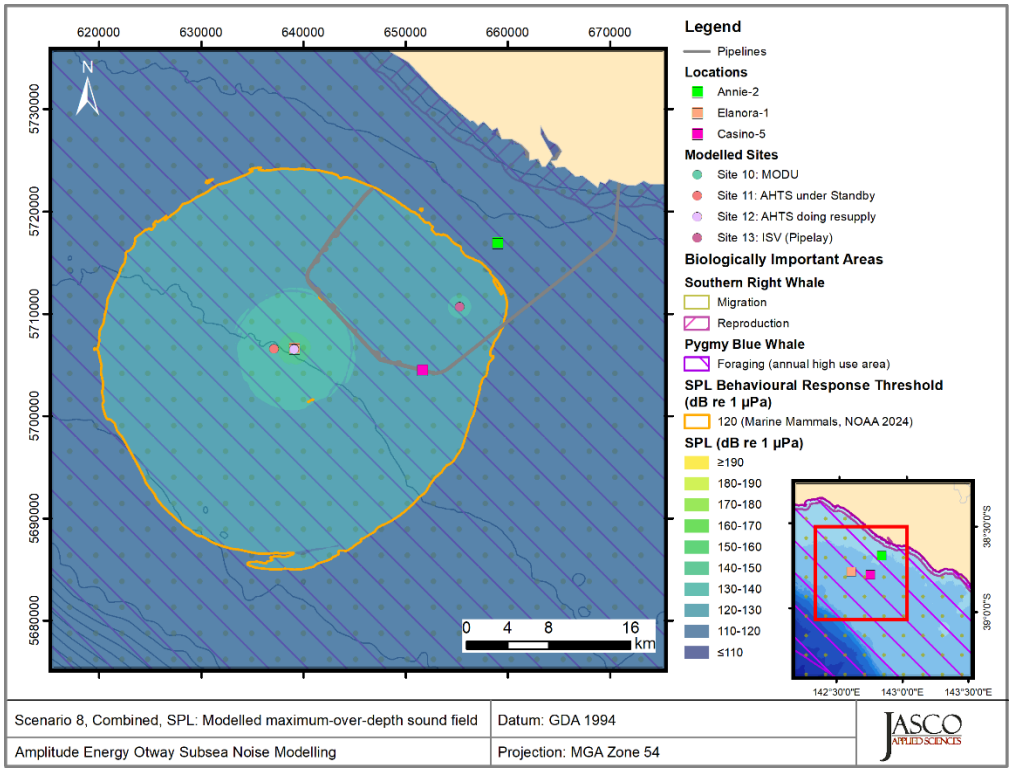

Figure 22. *Scenario 8, Drilling and standby OSV during resupply and pipelay – mid, Elanora-1 and Casino-5, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

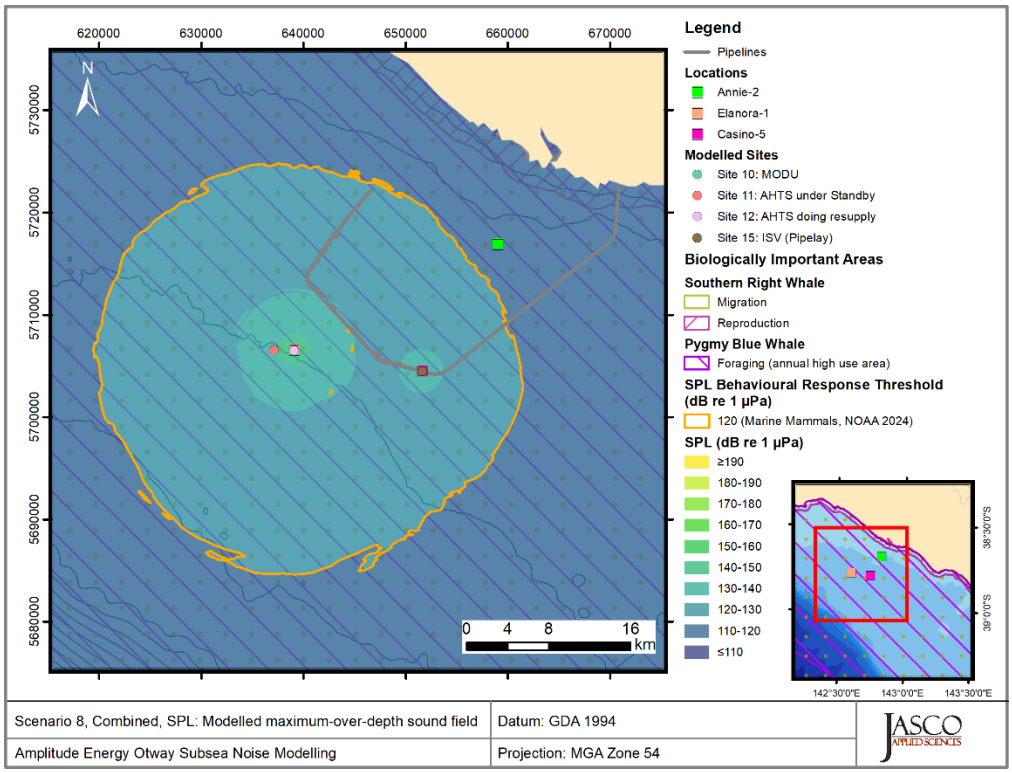

Figure 23. *Scenario 8, Drilling and standby OSV during resupply and pipelay – end, Elanora-1 and Casino-5, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

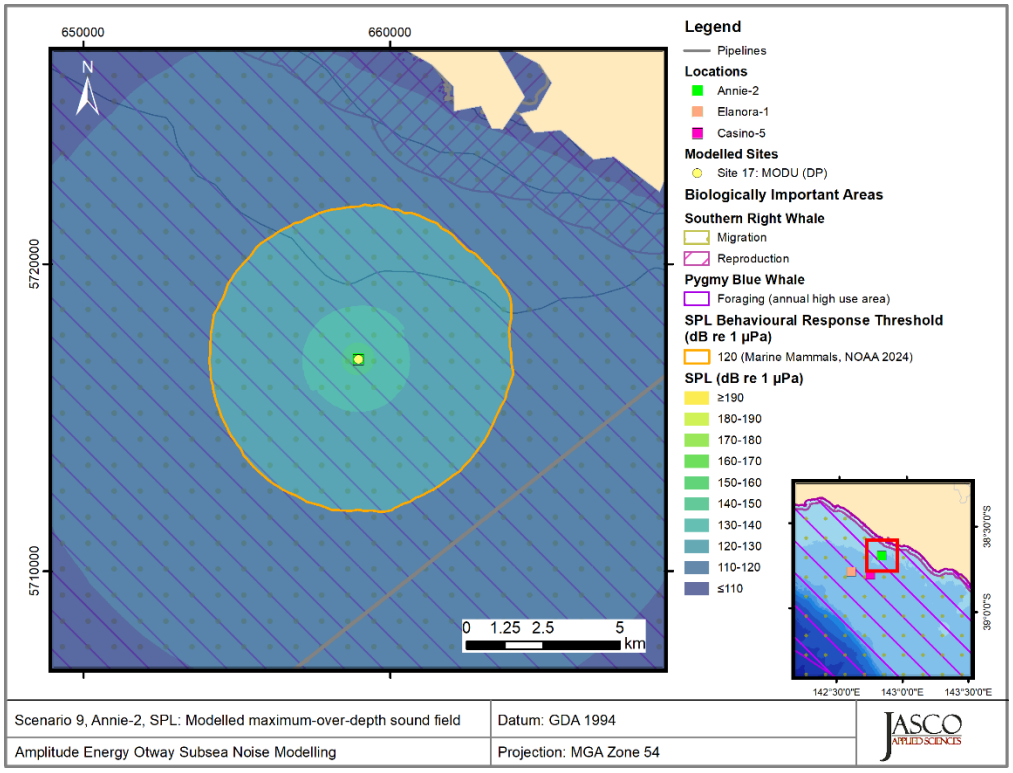

Figure 24. *Scenario 9, Modu on DP, Annie-2, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

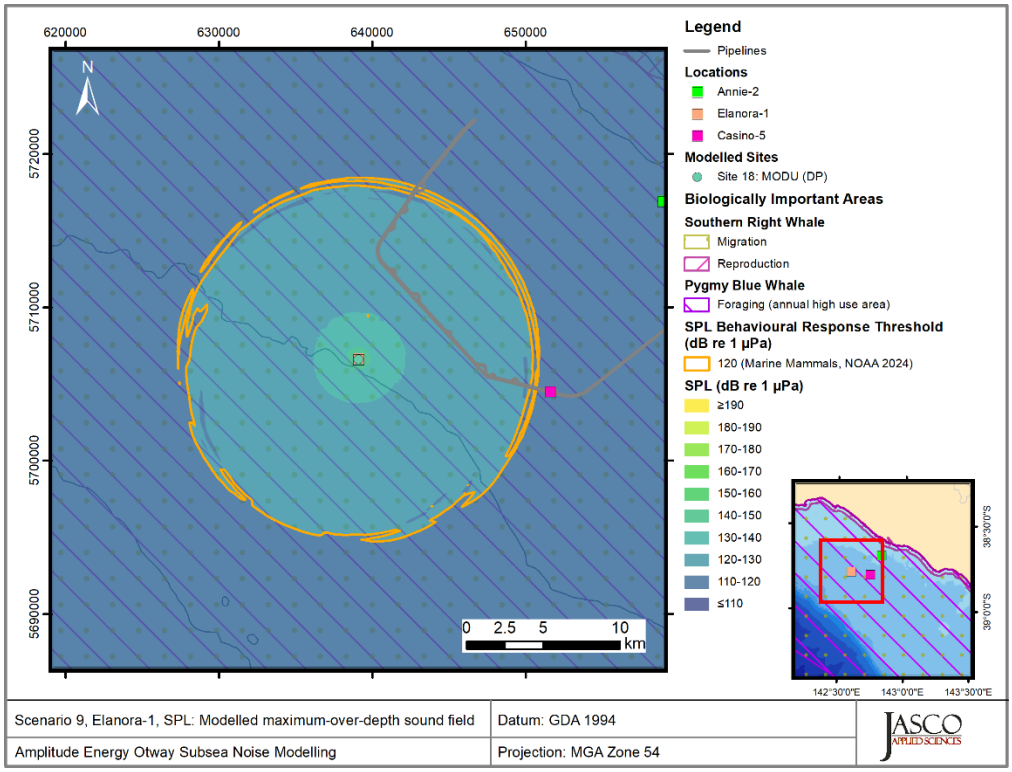

Figure 25. *Scenario 9, MODU on DP, Elanora-1, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

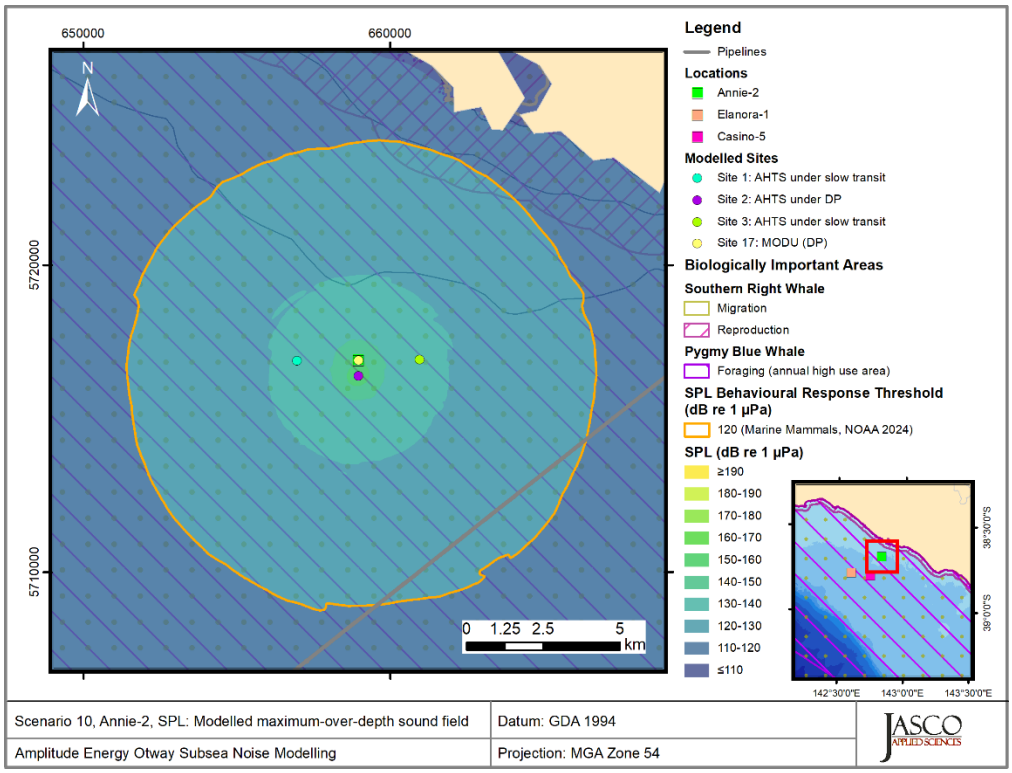

Figure 26. *Scenario 10, Mooring with Modu on DP, Annie-2, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

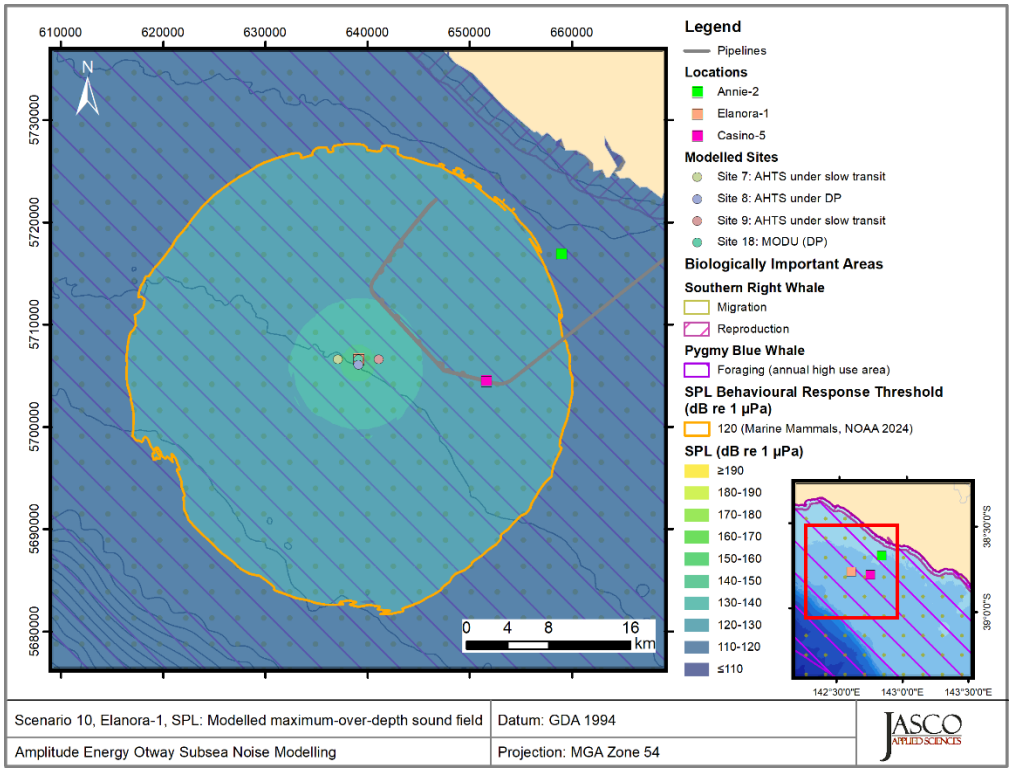

Figure 27. *Scenario 10, Mooring with MODU on DP, Elanora-1, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

4.2.2. Accumulated SEL_{24h} Sound level Contour Maps

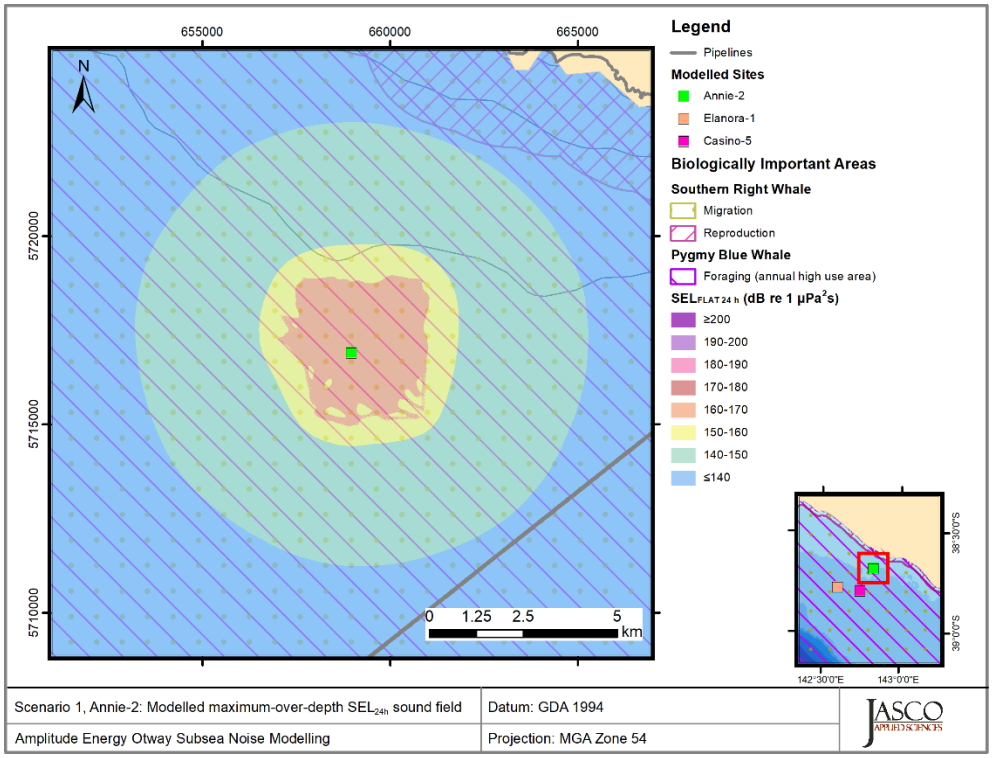

Figure 28. *Scenario 1, Drilling prelays, Annie-2, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

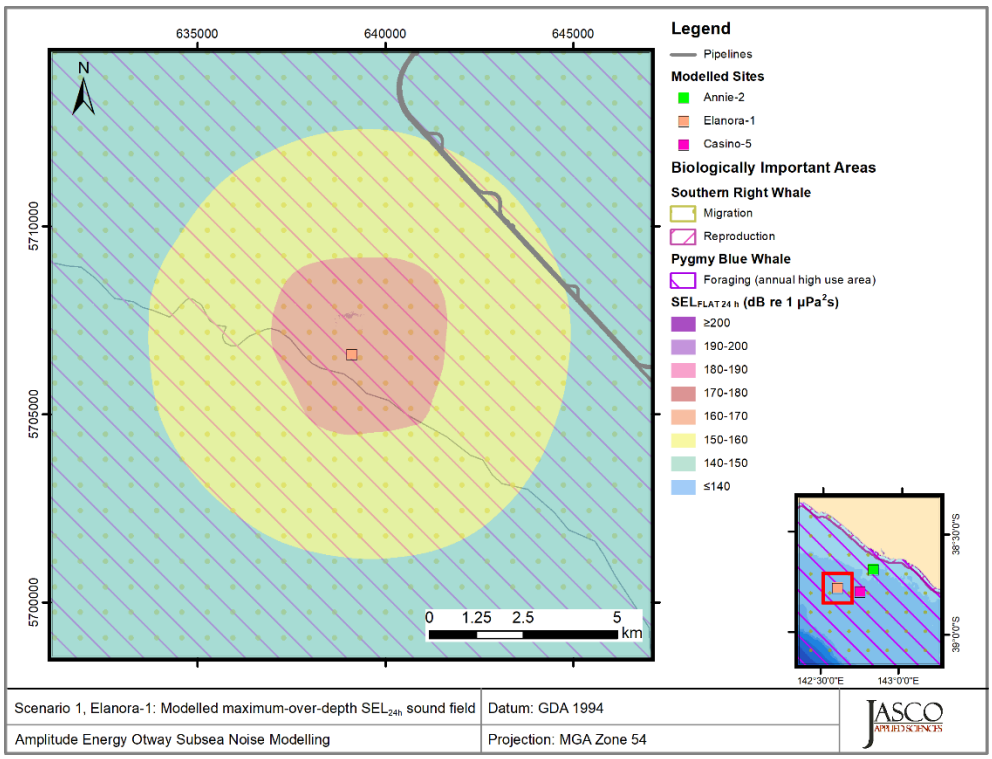

Figure 29. *Scenario 1, Drilling Prelays, Elanora-1, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

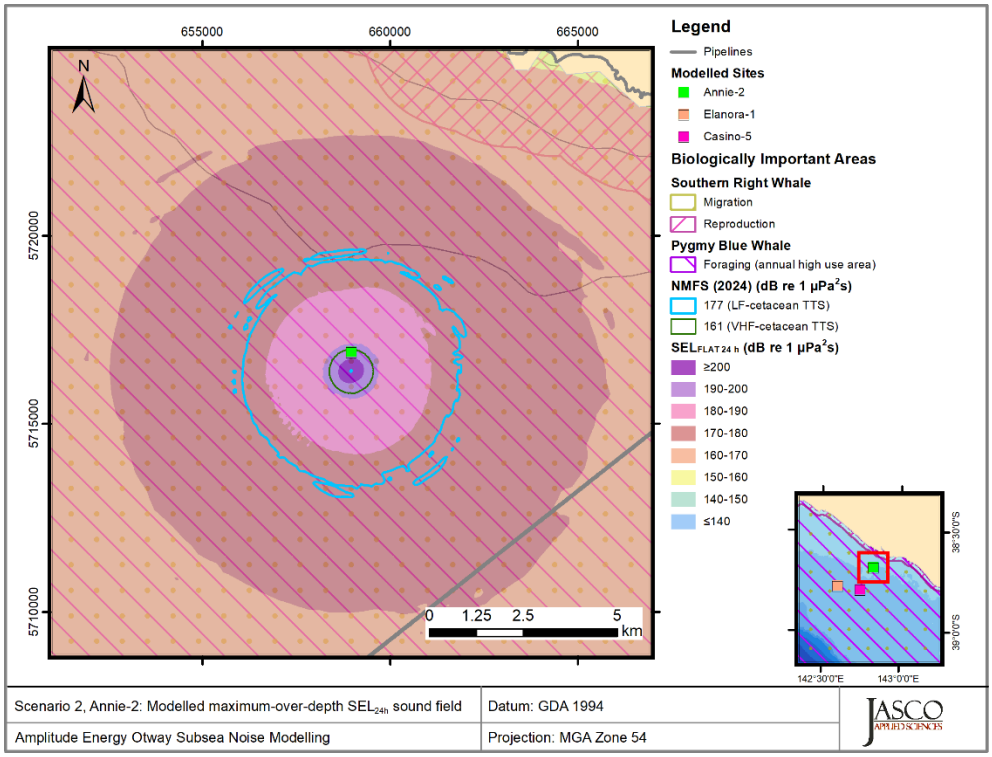

Figure 30. *Scenario 2, Mooring, Annie-2, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

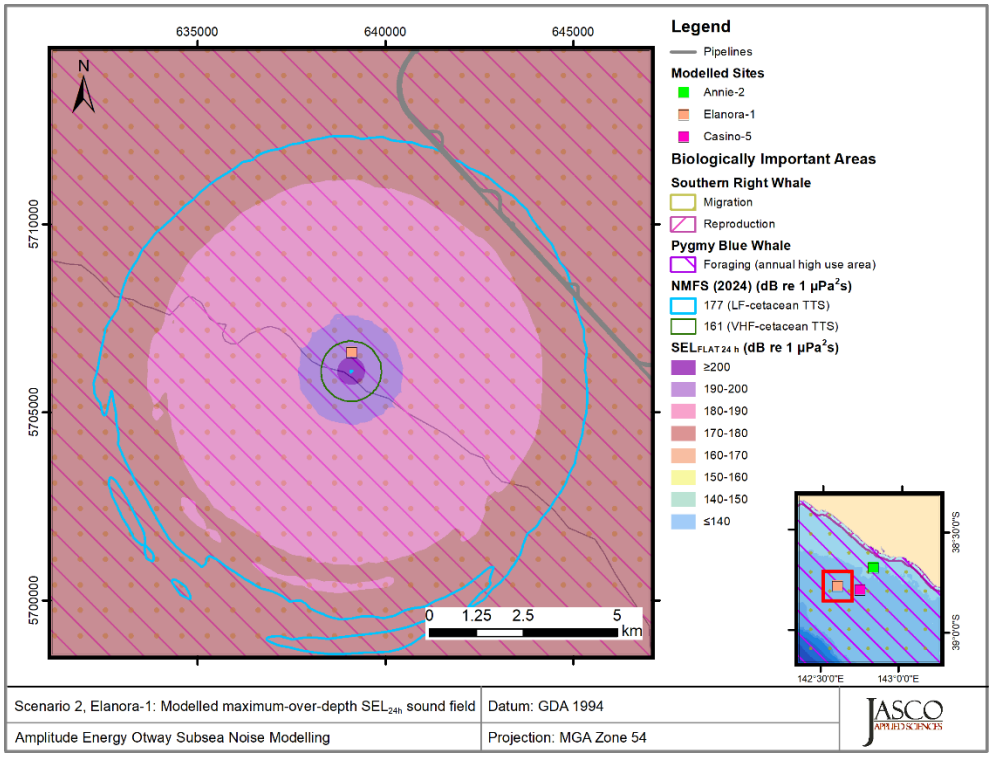

Figure 31. *Scenario 2, Mooring, Elanora-1, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

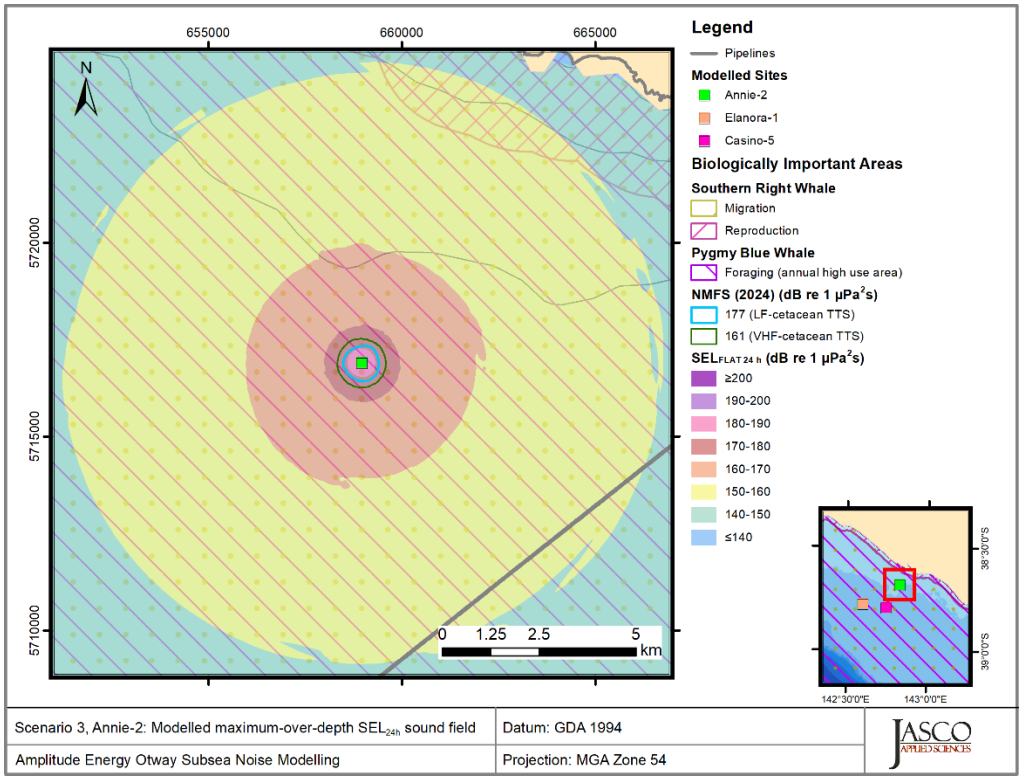

Figure 32. *Scenario 3, MODU Drilling, Annie-2, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

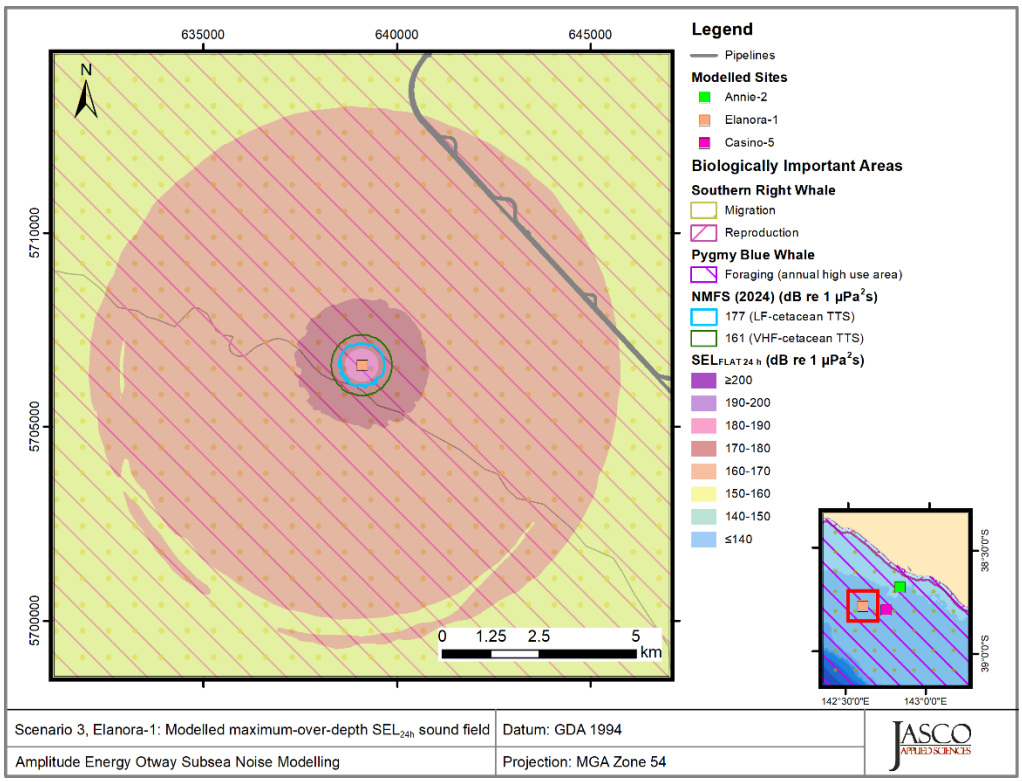

Figure 33. *Scenario 3, MODU Drilling, Elanora-1, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

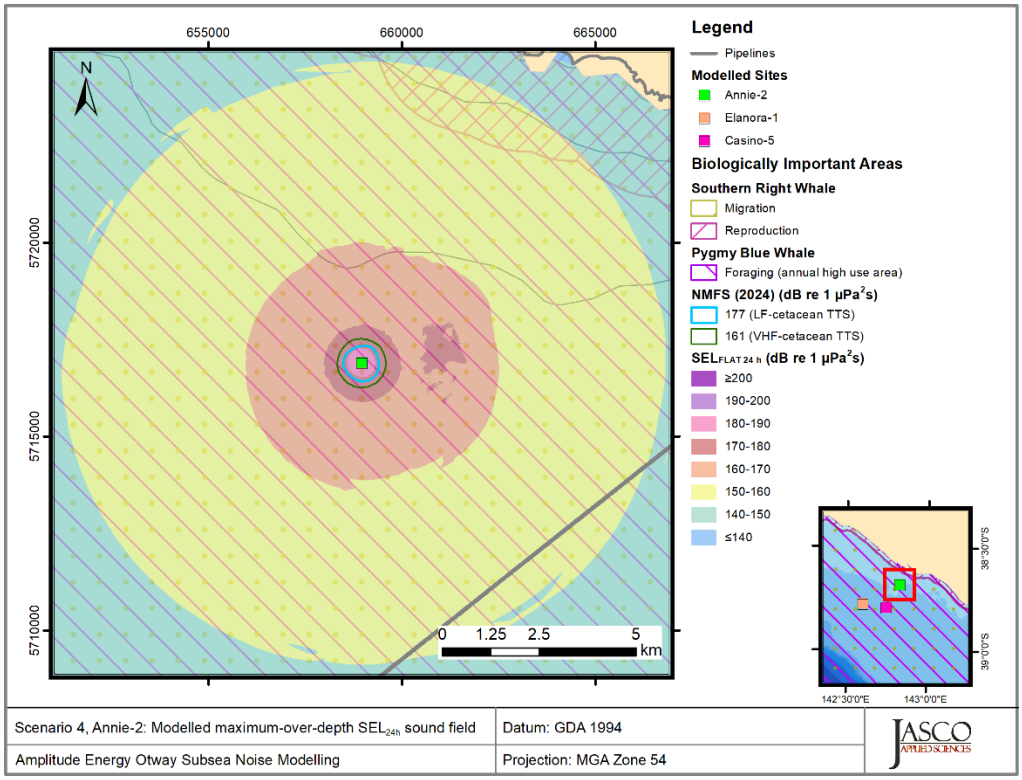

Figure 34. *Scenario 4, Drilling and standby OSV, Annie-2, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

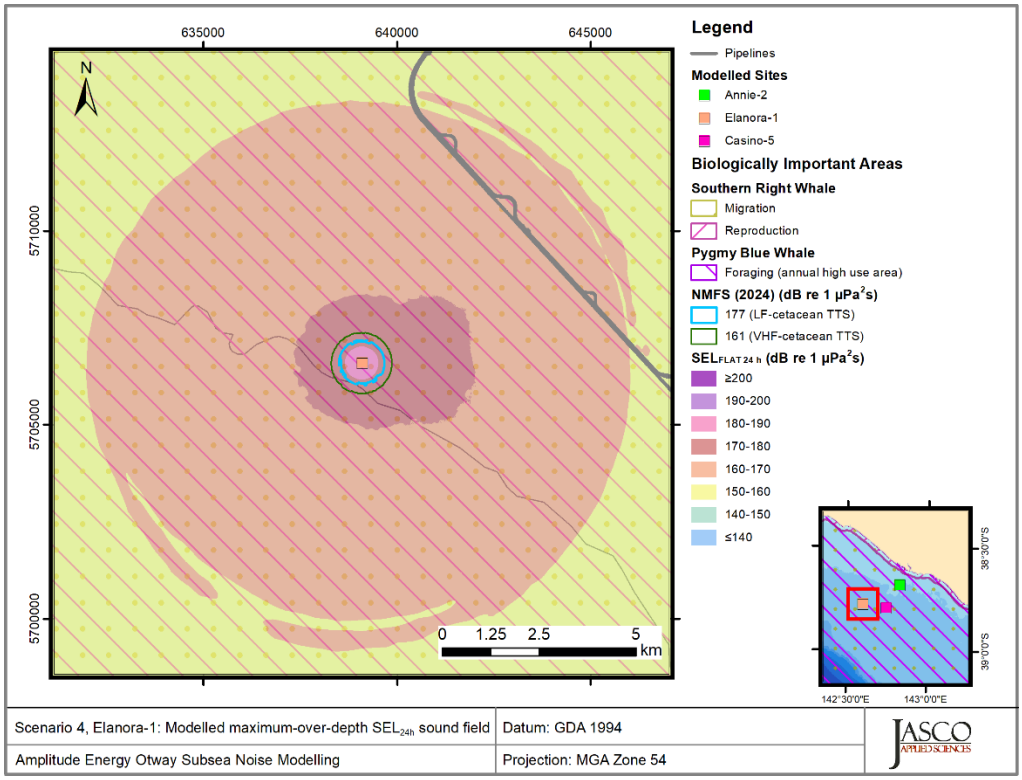

Figure 35. *Scenario 4, Drilling and standby OSV, Elanora-1, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

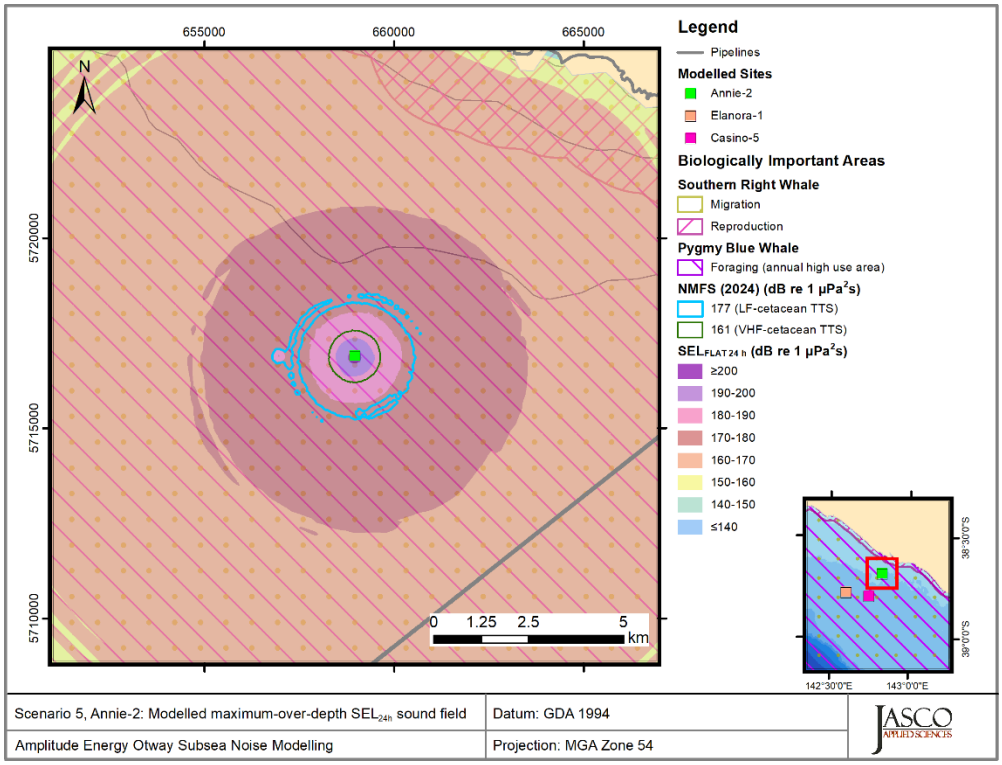

Figure 36. *Scenario 5, Drilling and standby OSV during resupply, Annie-2, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

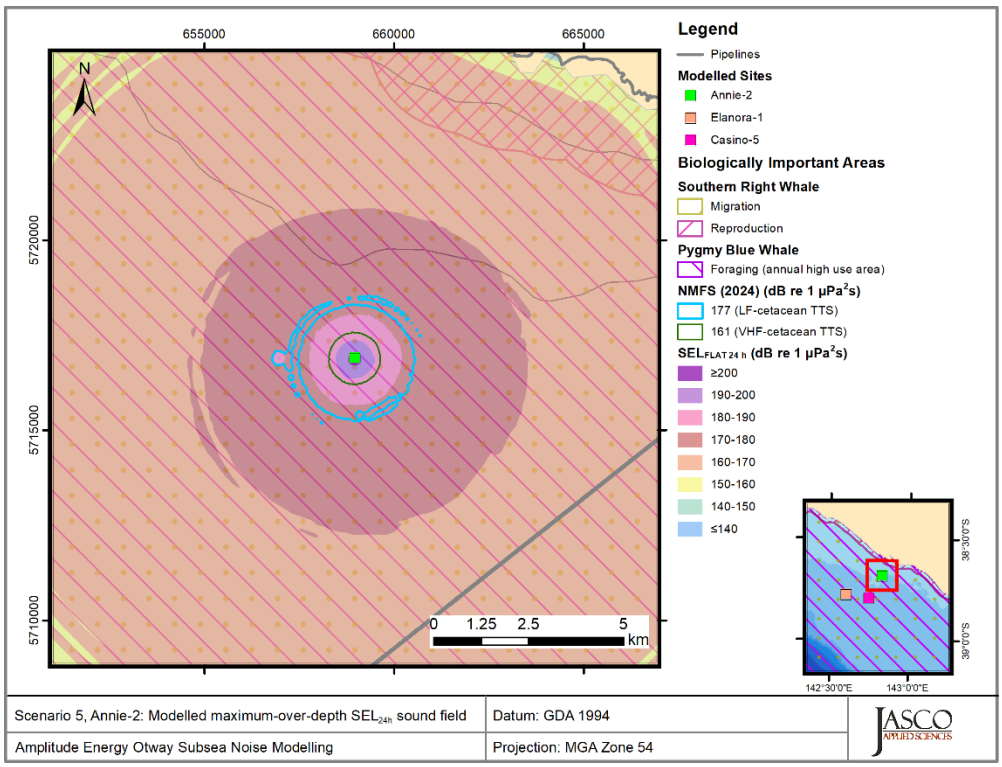

Figure 37. *Scenario 5, Drilling and standby OSV during resupply, Elanora-1, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

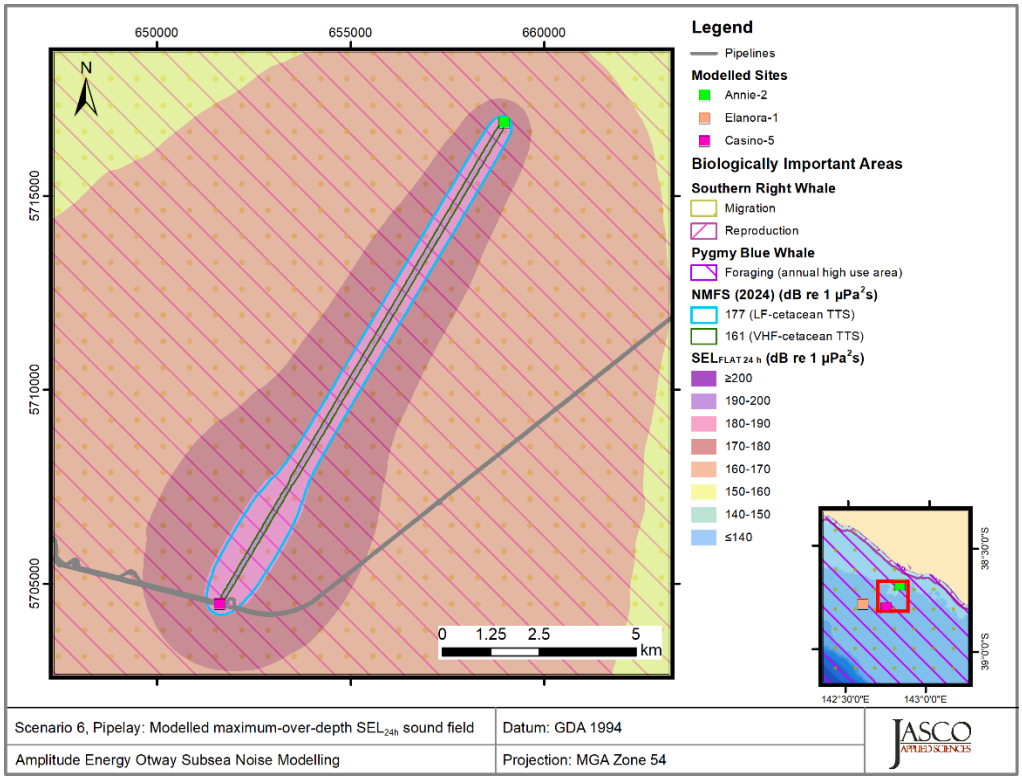

Figure 38. *Scenario 6, Pipeline/Umbilical installation*, Annie-2 & Casino-5, *accumulated SEL24h*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

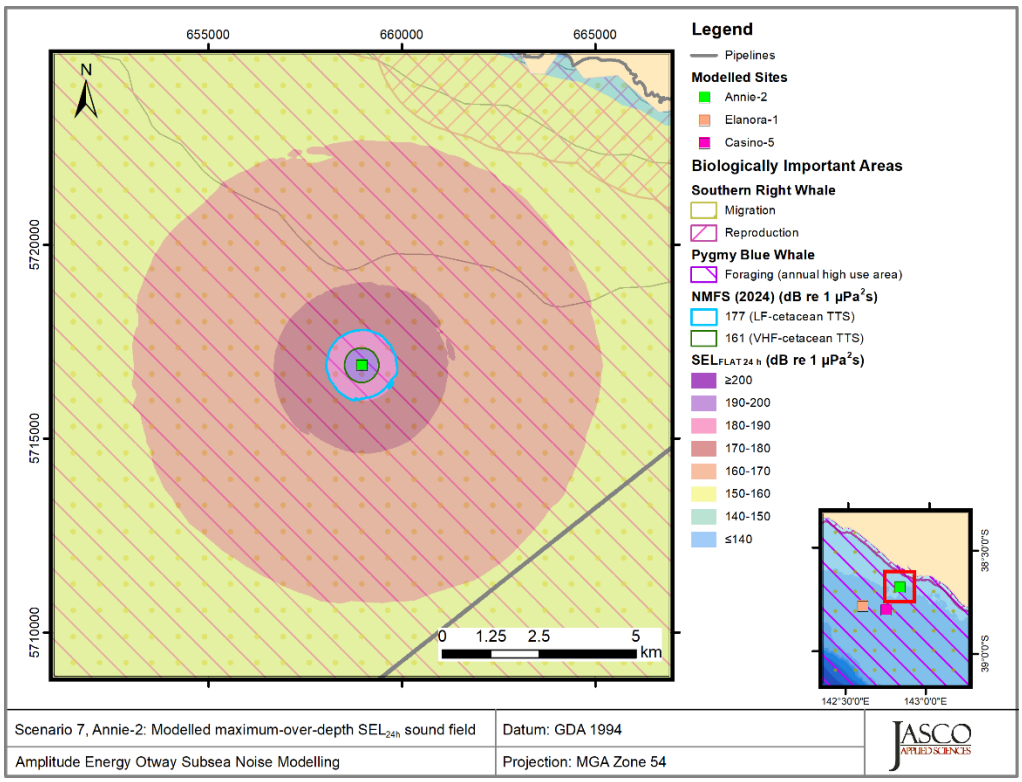

Figure 39. *Scenario 7, Installation, Annie-2, accumulated SEL24h*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

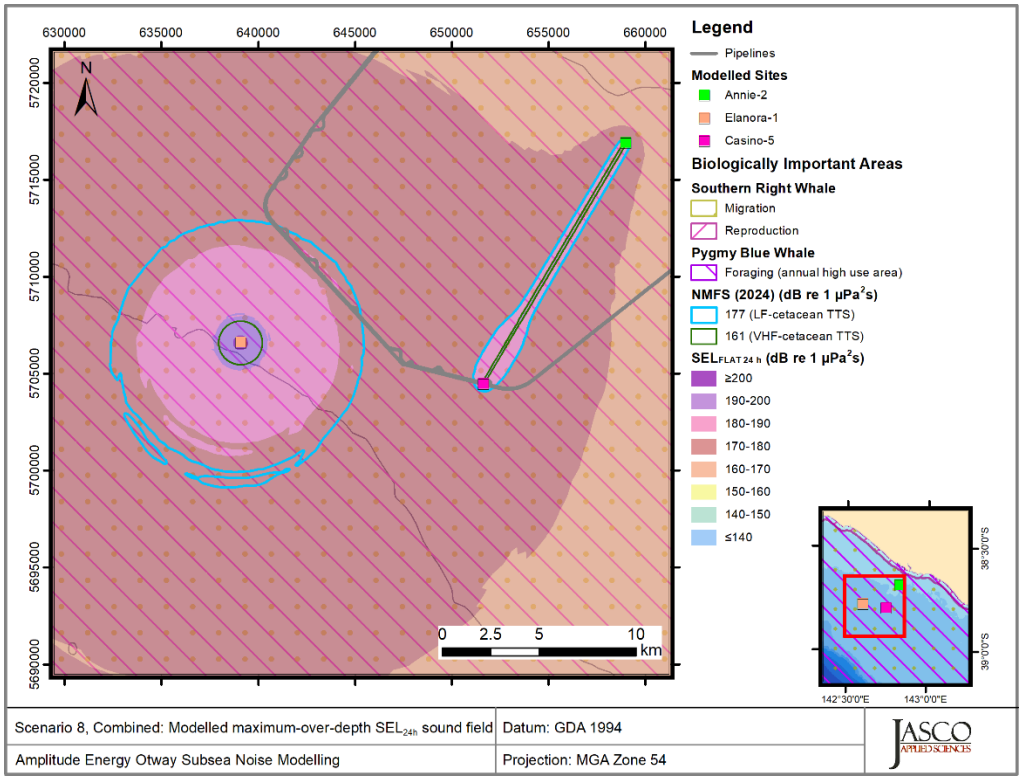

Figure 40. *Scenario 8, Drilling and standby OSV during resupply and pipelay, Elanora-1 and between Annie-2 and Casino-5, accumulated SEL$_{24h}$*: Sound level contour map showing weighted maximum-over-depth SEL$_{24h}$ results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

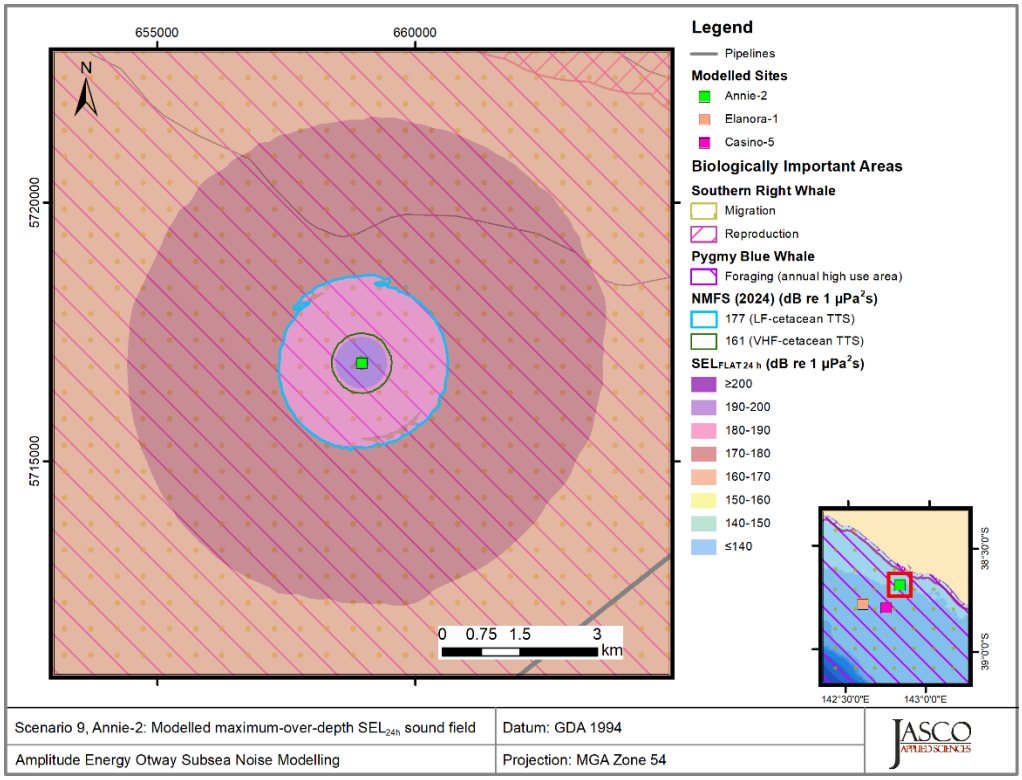

Figure 41. *Scenario 9, MODU on DP, Annie-2, accumulated SEL$_{24h}$*: Sound level contour map showing weighted maximum-over-depth SEL$_{24h}$ results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

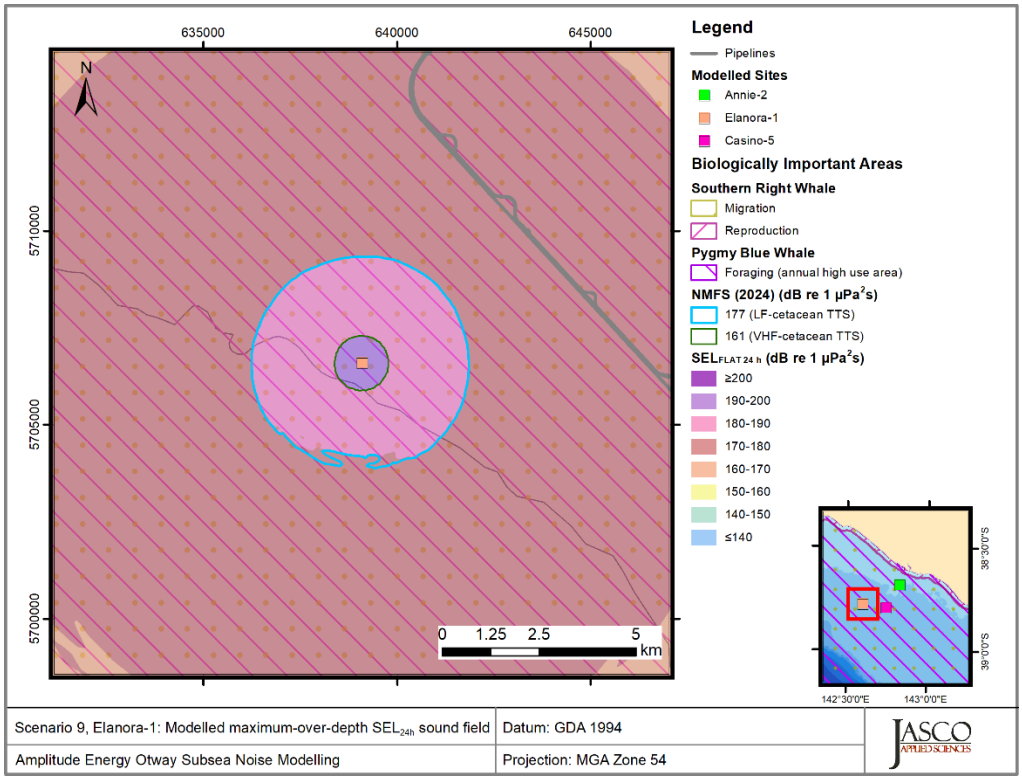

Figure 42. *Scenario 9, MODU on DP, Elanora-1, accumulated SEL$_{24h}$*: Sound level contour map showing weighted maximum-over-depth SEL$_{24h}$ results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

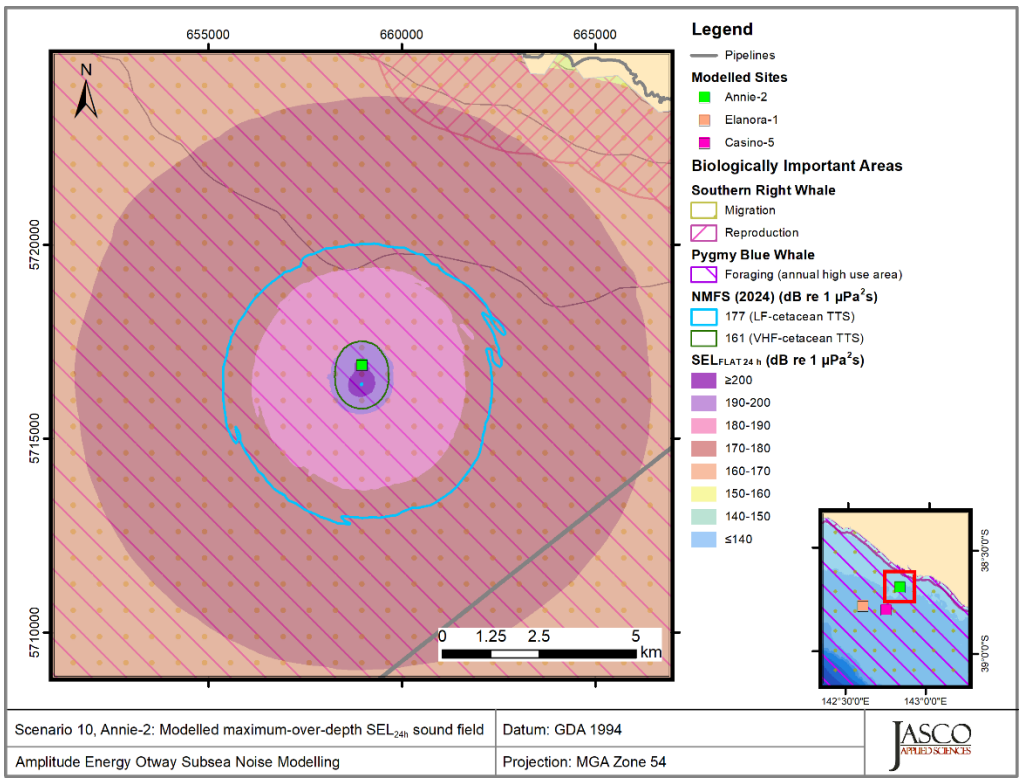

Figure 43. *Scenario 10, Mooring with MODU on DP, Annie-2, accumulated SEL$_{24h}$*: Sound level contour map showing weighted maximum-over-depth SEL$_{24h}$ results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

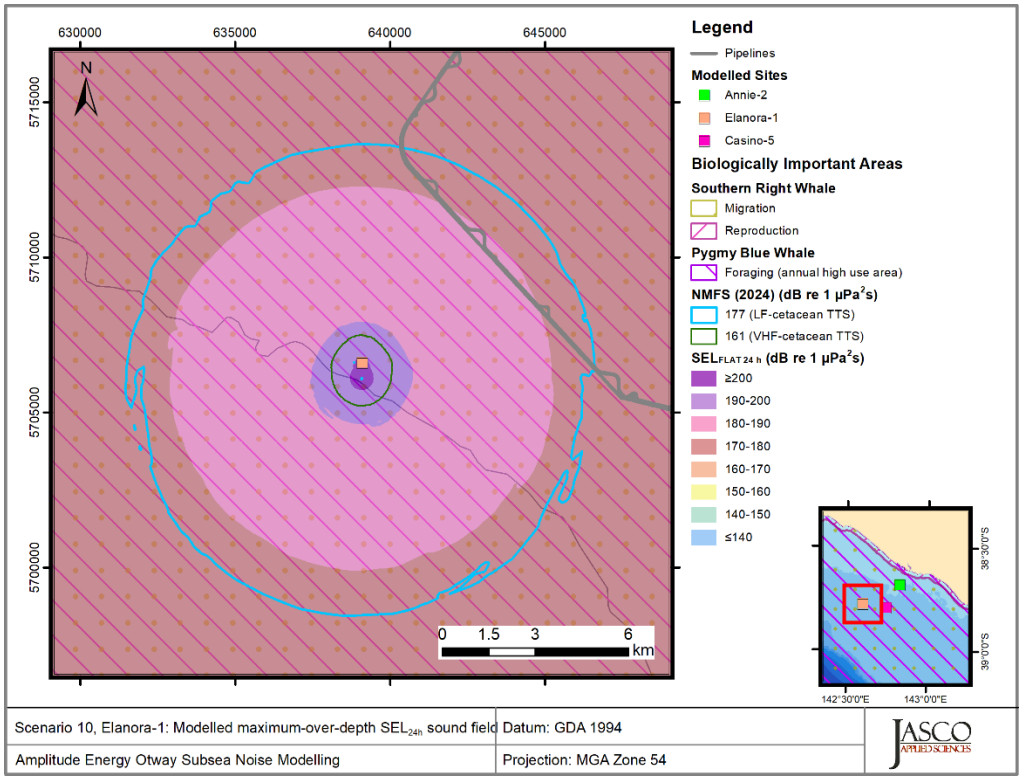

Figure 44. *Scenario 10, Mooring with MODU on DP, Elanora-1, accumulated SEL_{24h}*: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

5. Discussion and Conclusion

The sound speed profile (Appendix B.1.2) was derived from data from the U.S. Naval Oceanographic Office's Generalized Digital Environmental Model V 3.0 (GDEM; Teague et al. 1990, Carnes 2009). The month of August was chosen based on an analysis of the temperature, salinity, and sound speed profiles extracted from this database. The final profile consisted of a combination of three representative profiles from within the modelled area to capture the propagation effects associated with shallow and deep-water areas.

The August sound speed profile was primarily upward refracting between the sea surface and 160 m water depth. The upward refracting section of the profile may result in energy being refracted away from the seabed and back into the water column, which can lead to large distances to isopleths compared to other months. The upward refracting sound speed profile has the potential trap frequencies above 93 Hz based on the thickness of the refracting layer (Jensen et al. 2011). These frequencies also correspond to the majority of the highest spectral levels for the considered sources detailed in Section 3.1, which can further enhance large distances to isopleths and criteria compared to other months.

Considering activity locations are situated on the continental shelf, variations in bathymetry were generally gradual within the modelled areas. Any variations in the bathymetry had a small effect on the predicted sound field footprints as manifested in the generally symmetric sound field footprints. However, the composition of the seabed used for modelling had a more substantial influence when comparing the threshold radii and sound field footprints between the Annie-2 and Elanora-1 areas. The presence of a thin veneer of un-consolidated coarse sand overlying semi-cemented carbonate rock at Elanora-1 led to a more reflective seabed and likely led to larger isopleths for low level thresholds than Annie-2. This is most evident for the marine mammal behavioural threshold of 120 dB re 1 µPa (SPL) for non-impulsive sound sources, where the Elanora-1 radii and areas are larger than Annie-2 radii and areas. However, the distribution of sand over cemented carbonate appears to be variable in the Otway Basin; (McPherson et al. 2021). Towards the Elanora-1 area, for simplicity, modelling has assumed a sand layer throughout the area. In reality, the sand layer may be present or absent depending on exact location and hence radii may be smaller than predicted. In general, the sediment cover along the continental shelf of the Otway region is minimal and non-uniform (James and Bone 2010).

The modelled scenarios generally considered activities at either Elanora-1 or Annie-2. The exception are, pipelay between Annie-2 and Casino-5 and the concurrent operations with drilling activities at Elanora-1 occurring at the same time as pipelay between Annie-2 and Casino-5 (Scenario 8). The concurrent operations scenario (Scenario 8) was considered to capture what may be a worst-case occurrence, with multiple simultaneous operations occurring. Figures 21–23 show the potential difference in the SPL contours when the pipelay may occur simultaneously but at different locations along the route with drilling activities at Elanora-1. These contours can be compared to Figure 15 for the same drilling activities at occurring only at Elanora-1. Whilst the total ensonified area and isopleth contours do increase when activities at Elanora-1 are considered with pipelay between Annie-2 and Casino-5, the resultant contours to isopleths like the behavioural response criteria of 120 dB re 1 µPa (SPL) do not significantly change. This is likely due to the activities at Elanora-1 occurring over a more reflective seabed, as discussed above, and containing louder sources than the pipelay activity. Within this modelled scenario activities at Elanora-1 are predicted to be the dominant contributor to the sound field. For PTS and TTS thresholds, for all considered hearing groups, Figure 40 show the result of the concurrent operations scenario. The additional energy that is included by considering both sets of operations simultaneously is not substantial enough to increase the size of contours such that they join. As such, for the considered concurrent scenario, the distances to PTS and TTS thresholds are approximately the same whether activities occur independently or simultaneously.

For the tables presented in Section 4.1, where a dash is used in place of a horizontal distance, these thresholds may or may not be reached. Due to the discretely sampled 20 m calculation grids of the modelled sound fields, distances to these levels could not be estimated for practicable computational purposes. It is likely that SPL isopleths could be reached at distances between the source and the modelled horizontal resolution (20 m); however, distances to injurious accumulated SEL thresholds may not be reached at any range greater than the source due the species-specific frequency weighing functions. Additionally, if close-to-source radii are comparable to the dimensions of the modelled vessel (MODU, AHTS, ISV or DSV) then they may only be reached within close proximity to a vessel, if at all.

The key results of this modelling study are summarised in Tables 18 and 19 below. These tables present the maximum distances to relevant criteria and/or thresholds. Table 18 summarises scenarios 1–7 and associated operations which may occur at Annie-2, Elanora-1, and pipelay between Annie-2 and Casino-5. Table 19 summarises potential concurrent drilling operations at Elanora-1 and pipelay operations between Annie-2 and Casino-5.

Table 18. Summary of maximum (R_{max}) horizontal distances (in km) to the behavioural response threshold, temporary threshold shift (TTS) and permanent threshold shift (PTS) for marine mammals. The maximum across scenarios 1–7 at Annie-2, Elanora-1, and pipelay between Annie-2 and Casino-5 are reported here.

Hearing group	Modelled distance to effect threshold (R_{max})					
	Behavioural response[a]	TTS[b]	PTS[b]	Behavioural response[a]	TTS[b]	PTS[b]
	Annie-2			Elanora-1		
Low-frequency (LF) cetaceans	7.87	3.60	0.40	21.7	7.54	0.50
High-frequency (HF) cetaceans		0.47	0.03		0.66	0.04
Very High-frequency (VHF) cetaceans		0.69	0.11		0.88	0.09
Otariid Seals		0.44	0.03		0.56	0.03

Noise exposure criteria: [a] NOAA (2024) and [b] NMFS (2024).

Table 19. Summary of maximum (R_{max}) horizontal distances (in km) to the behavioural response threshold, temporary threshold shift (TTS) and permanent threshold shift (PTS) for marine mammals. For the concurrent scenario (Scenario 8) with drilling at Elanora-1 and pipelay between Annie-2 and Casino-5

Hearing group	Modelled distance to effect threshold (R_{max})		
	Behavioural response[a]	TTS[b]	PTS[b]
	Concurrent		
Low-frequency (LF) cetaceans	30.7	7.50	0.48
High-frequency (HF) cetaceans		0.90	0.03
Very High-frequency (VHF) cetaceans		1.14	0.12
Otariid Seals		0.57	0.03

Noise exposure criteria: [a] NOAA (2024) and [b] NMFS (2024).
This scenario is a combination of Scenario 5 at Elanora-1 and Scenario 6 to represent concurrent operations.

Table 20. Summary of maximum (R_{max}) horizontal distances (in km) to the behavioural response threshold, temporary threshold shift (TTS) and permanent threshold shift (PTS) for marine mammals. The maximum across scenarios 9 and 10 at Annie-2 and Elanora-1 are shown.

Hearing group	Modelled distance to effect threshold (R_{max})					
	Behavioural response[a]	TTS[b]	PTS[b]	Behavioural response[a]	TTS[b]	PTS[b]
	Annie-2			Elanora-1		
Low-frequency (LF) cetaceans	8.02	3.88	0.61	24.8	7.92	0.67
High-frequency (HF) cetaceans		0.71	0.03		0.88	0.04
Very High-frequency (VHF) cetaceans		0.87	0.07		1.15	0.06
Otariid Seals		0.68	0.03		0.82	0.03

Noise exposure criteria: [a] NOAA (2024) and [b] NMFS (2024).

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Appendix A. Acoustic Metrics

This section describes in detail the acoustic metrics, impact criteria, and frequency weighting relevant to the modelling study.

A.1. Pressure Related Acoustic Metrics

Underwater sound pressure amplitude is measured in decibels (dB) relative to a fixed reference pressure of p_0 = 1 µPa. Because the perceived loudness of sound, especially pulsed sound such as from seismic airguns, pile driving, and sonar, is not generally proportional to the instantaneous acoustic pressure, several sound level metrics are commonly used to evaluate sound and its effects on marine life. Here we provide specific definitions of relevant metrics used in the accompanying report. Where possible, we follow International Organization for Standardization definitions and symbols for sound metrics (e.g., ISO 2017, ANSI S1.1-2013).

The sound pressure level (SPL or L_p; dB re 1 µPa) is the root-mean-square (rms) pressure level in a stated frequency band over a specified time window (T; s). It is important to note that SPL always refers to an rms pressure level and therefore not instantaneous pressure:

$$L_p = 10 \log_{10} \left(\frac{1}{T} \int_T g(t)\, p^2(t)\, dt / p_0^2 \right) \text{ dB} \tag{A-1}$$

where $g(t)$ is an optional time weighting function. In many cases, the start time of the integration is marched forward in small time steps to produce a time-varying SPL function.

The sound exposure level (SEL or L_E; dB re 1 µPa^2·s) is the time-integral of the squared acoustic pressure over a duration (T):

$$L_E = 10 \log_{10} \left(\int_T p^2(t)\, dt / T_0 p_0^2 \right) \text{ dB} \tag{A-2}$$

where T_0 is a reference time interval of 1 s. SEL continues to increase with time when non-zero pressure signals are present. It is a dose-type measurement, so the integration time applied must be carefully considered for its relevance to impact to the exposed recipients.

SEL can be calculated over a fixed duration, such as the time of a single event or a period with multiple acoustic events. When applied to pulsed sounds, SEL can be calculated by summing the SEL of the N individual pulses. For a fixed duration, the square pressure is integrated over the duration of interest. For multiple events, the SEL can be computed by summing (in linear units) the SEL of the N individual events:

$$L_{E,N} = 10 \log_{10} \left(\sum_{i=1}^{N} 10^{\frac{L_{E,i}}{10}} \right) \text{ dB}\,. \tag{A-3}$$

If applied, the frequency weighting of an acoustic event should be specified, as in the case of weighted SEL (e.g., $L_{E,LFC,24h}$; Appendix 0). The use of fast, slow, or impulse exponential-time-averaging or other time-related characteristics should also be specified.

A.2. Decidecade Band Analysis

The distribution of a sound's power with frequency is described by the sound's spectrum. The sound spectrum can be split into a series of adjacent frequency bands. Splitting a spectrum into 1 Hz wide bands, called passbands, yields the power spectral density of the sound. This splitting of the spectrum into passbands of a constant width of 1 Hz, however, does not represent how animals perceive sound.

Because animals perceive exponential increases in frequency rather than linear increases, analysing a sound spectrum with passbands that increase exponentially in size better approximates real-world scenarios. In underwater acoustics, a spectrum is commonly split into decidecade bands, which are one tenth of a decade wide. A decidecade is sometimes referred to as a "1/3 octave" because one tenth of a decade is approximately equal to one third of an octave. Each decade represents a factor 10 in sound frequency. Each octave represents a factor 2 in sound frequency. The centre frequency of the ith band, $f_c(i)$, is defined as:

$$f_c(i) = 10^{\frac{i}{10}} \text{ kHz} \tag{A-4}$$

and the low (f_{lo}) and high (f_{hi}) frequency limits of the ith decade band are defined as:

$$f_{lo,i} = 10^{\frac{-1}{20}} f_c(i) \quad \text{and} \quad f_{hi,i} = 10^{\frac{1}{20}} f_c(i) \tag{A-5}$$

The decidecade bands become wider with increasing frequency, and on a logarithmic scale the bands appear equally spaced (Figure A-1). The acoustic modelling spans from band 10 (f_c (10) = 10 Hz) to band 44 ($f_c(44)$ = 25 kHz).

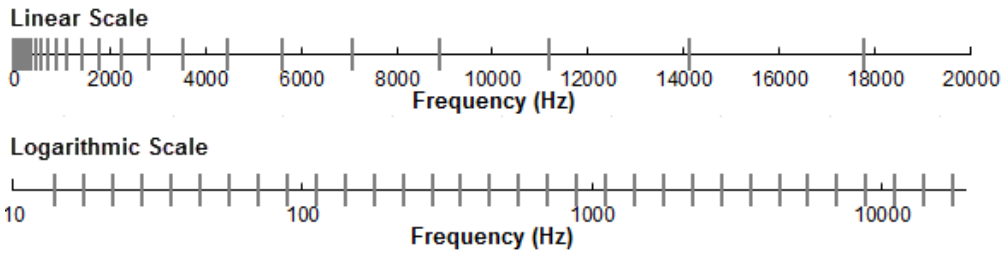

Figure A-1. Decidecade frequency bands (vertical lines) shown on a linear frequency scale and a logarithmic scale.

The sound pressure level in the ith band ($L_{p,i}$) is computed from the spectrum $S(f)$ between $f_{lo,i}$ and $f_{hi,i}$:

$$L_{p,i} = 10\, log_{10} \int_{f_{lo,i}}^{f_{hi,i}} S(f)\, \mathrm{d}f \text{ dB} \tag{A-6}$$

Summing the sound pressure level of all the bands yields the broadband sound pressure level:

$$\text{Broadband SPL} = 10 \log_{10} \sum_i 10^{\frac{L_{p,i}}{10}} \text{ dB} \tag{A-7}$$

Figure A-2 shows an example of how the decidecade band sound pressure levels compare to the sound pressure spectral density levels of an ambient sound signal. Because the decidecade bands are wider than 1 Hz, the decidecade band SPL is higher than the spectral levels at higher frequencies. Acoustic modelling of decidecade bands requires less computation time than 1 Hz bands and still resolves the frequency-dependence of the sound source and the propagation environment.

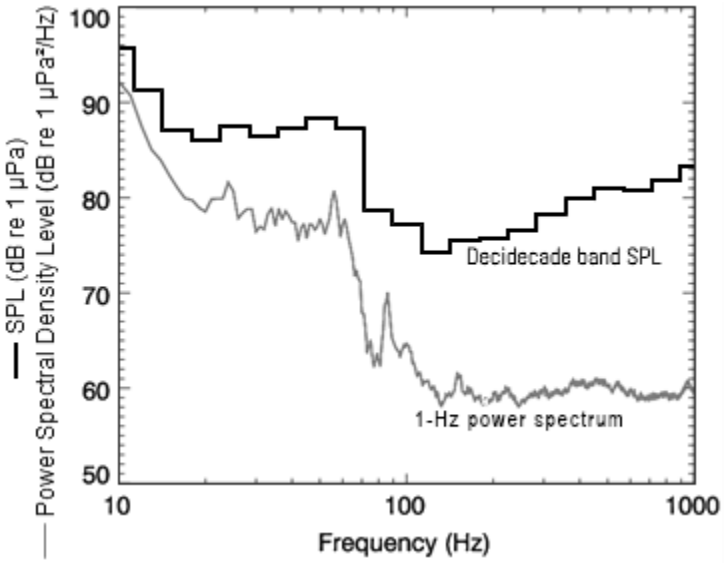

Figure A-2. Sound pressure spectral density levels and the corresponding decidecade band sound pressure levels of example ambient noise shown on a logarithmic frequency scale.Because the decidecade bands are wider with increasing frequency, the decidecade band SPL is higher than the power spectrum.

A.3. Marine Mammal Noise Effect Criteria

It has been long recognised that marine mammals can be adversely affected by underwater anthropogenic noise. For example, Payne and Webb (1971) suggest that communication distances of fin whales are reduced by shipping sounds. Subsequently, similar concerns arose regarding effects of other underwater noise sources and the possibility that impulsive sources—primarily airguns used in seismic surveys—could cause auditory injury. This led to a series of workshops held in the late 1990s, conducted to address acoustic mitigation requirements for seismic surveys and other underwater noise sources (NMFS 1998, ONR 1998, Nedwell and Turnpenny 1998, HESS 1999, Ellison and Stein 1999). In the years since these early workshops, a variety of thresholds have been proposed for auditory injury, impairment, and disturbance. The following sections summarise the recent development of thresholds; however, this field remains an active research topic.

A.3.1. Injury and Hearing Sensitivity Changes

In recognition of shortcomings of the SPL-only based auditory injury criteria, in 2005 NMFS sponsored the Noise Criteria Group to review literature on marine mammal hearing to propose new noise exposure criteria. Some members of this expert group published a landmark paper (Southall et al. 2007) that suggested assessment methods similar to those applied for humans. The resulting recommendations introduced dual auditory injury criteria for impulsive sounds that included peak pressure level thresholds and SEL_{24h} thresholds, where the subscripted 24h refers to the accumulation period for calculating SEL. The peak pressure level criterion is not frequency weighted whereas SEL_{24h} is frequency weighted according to one of four marine mammal species hearing groups: low-, mid- and high-frequency cetaceans (LF, MF, and HF cetaceans, respectively) and Pinnipeds in Water (PINN). These weighting functions are referred to as M-weighting filters (analogous to the A-weighting filter for humans; see Appendix A.4). The SEL_{24h} thresholds were obtained by extrapolating measurements of onset levels of Temporary Threshold Shift (TTS) in belugas by the amount of TTS required to produce Permanent Threshold Shift (PTS) in chinchillas. The Southall et al. (2007) recommendations do not specify an exchange rate, which suggests that the thresholds are the same regardless of the duration of exposure (i.e., it implies a 3 dB exchange rate).

Wood et al. (2012) refined Southall et al.'s (2007) thresholds, suggesting lower PTS and TTS values for LF and HF cetaceans while retaining the filter shapes. Their revised thresholds were based on TTS-onset levels in harbour porpoises from Lucke et al. (2009), which led to a revised impulsive sound PTS threshold for HF cetaceans of 179 dB re 1 $\mu Pa^2 \cdot s$. Because there were no data available for baleen whales, Wood et al. (2012) based their recommendations for LF cetaceans on results obtained from MF cetacean studies. In particular they referenced the Finneran and Schlundt (2010) research, which found mid-frequency cetaceans are more sensitive to non-impulsive sound exposure than Southall et al. (2007) assumed. Wood et al. (2012) thus recommended a more conservative TTS-onset level for LF cetaceans of 192 dB re 1 $\mu Pa^2 \cdot s$.

As of present, a definitive approach is still not apparent. There is consensus in the research community that an SEL-based method is preferable, either separately or in addition to an SPL-based approach to assess the potential for injuries. In August 2016, after substantial public and expert input into three draft versions and based largely on the above-mentioned literature (NOAA 2013, 2015, 2016), NMFS finalised technical guidance for assessing the effect of anthropogenic sound on marine mammal hearing (NMFS 2016). The guidance describes auditory injury criteria with new thresholds and frequency weighting functions for the five hearing groups described by Finneran and Jenkins (2012b). The latest revision to this work was published in 2024 (NMFS 2024).

A.3.2. Behavioural Response

Numerous studies on marine mammal behavioural responses to sound exposure have not resulted in consensus in the scientific community regarding the appropriate metric for assessing behavioural reactions. However, it is recognised that the context in which the sound is received affects the nature and extent of responses to a stimulus (Southall et al. 2007, Ellison and Frankel 2012, Southall et al. 2016).

NMFS currently uses a step function (all-or-none) threshold of 120 dB re 1 µPa SPL (unweighted) for non-impulsive sounds to assess and regulate noise-induced behavioural impacts on marine mammals (NOAA 2024). The 120 dB re 1 µPa threshold is associated with continuous sources and was derived based on studies examining behavioural responses to drilling and dredging (NOAA 2018), referring to Malme et al. (1983), Malme et al. (1984), and Malme et al. (1986), which were considered in Southall et al. (2007). Malme et al. (1986) found that playback of drillship noise did not produce clear evidence of disturbance or avoidance for levels below 110 dB re 1 µPa (SPL), possible avoidance occurred for exposure levels approaching 119 dB re 1 µPa. Malme et al. (1984) determined that measurable reactions usually consisted of rather subtle short-term changes in speed and/or heading of the whale(s) under observation. It has been shown that both received level and proximity of the sound source is a contributing factor in eliciting behavioural reactions in humpback whales (Dunlop et al. 2017, Dunlop et al. 2018).

A.4. Marine Mammal Frequency Weighting

The potential for noise to affect animals depends on how well the animals can hear it. Noises are less likely to disturb or injure an animal if they are at frequencies that the animal cannot hear well. An exception occurs when the sound pressure is so high that it can physically injure an animal by non-auditory means (i.e., barotrauma). For sound levels below such extremes, the importance of sound components at particular frequencies can be scaled by frequency weighting relevant to an animal's sensitivity to those frequencies (Nedwell and Turnpenny 1998, Nedwell et al. 2007).

A.4.1. Marine Mammal Frequency Weighting Functions

In 2015, a US Navy technical report by Finneran (2015) recommended new auditory weighting functions. The overall shape of the auditory weighting functions is similar to human A-weighting functions, which follows the sensitivity of the human ear at low sound levels. The new frequency-weighting function is expressed as:

$$G(f) = K + 10\log_{10}\left[\left(\frac{(f/f_{lo})^{2a}}{\left[1+(f/f_{lo})^{2}\right]^{a}\left[1+(f/f_{hi})^{2}\right]^{b}}\right)\right] \quad \text{(A-8)}$$

Finneran (2015) proposed five functional hearing groups for marine mammals in water: low-, mid- and high-frequency cetaceans (LF, MF, and HF cetaceans, respectively), phocid pinnipeds, and otariid pinnipeds. The parameters for these frequency-weighting functions were further modified the following year (Finneran 2016) and were adopted in NOAA's technical guidance that assesses acoustic impacts on marine mammals (NMFS 2018), and in the latest guidance by NMFS (2024). The updates did not affect the content related to either the definitions of frequency-weighting functions or the threshold values, however, the terminology for mid- and high-frequency cetaceans was changed to high- and very high-frequency cetaceans (VHF cetaceans). Table A-1. lists the frequency-weighting parameters for each hearing group relevant to this assessment, and Figure A-3 shows the resulting frequency-weighting curves.

Table A-1. Parameters for the auditory weighting functions used in this project as recommended by NMFS (2024).

	NMFS (2024)				
Functional Hearing group	**a**	**b**	**flo (kHz)**	**fhi (kHz)**	**C (dB)**
Low-frequency cetaceans (baleen whales)	0.99	5	0.168	26.6	0.12
High-frequency cetaceans (most dolphins, plus sperm, beaked, and bottlenose whales)	1.55	5	1.73	129	0.32
Very high-frequency cetaceans (true porpoises, *Kogia*, river dolphins, *Cephalorhynchus* spp., *Lagenorhynchus cruciger* and *L. australis*)	2.23	5	5.93	186	0.91
Otariid Seals in water	1.58	5	2.53	43.8	1.37

* The 'C' parameter in NMFS (2024) is equivalent to the 'K' parameter in Finneran (2015).

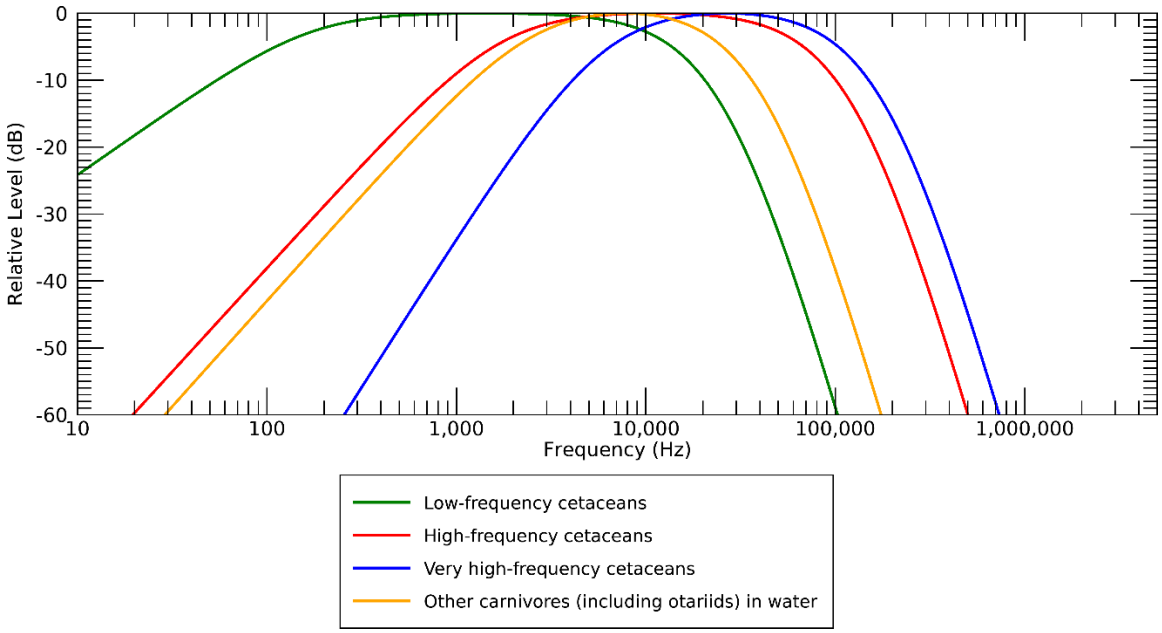

Figure A-3. Auditory weighting functions for functional marine mammal hearing groups used in this project as recommended by NMFS (2024).

Appendix B. Methods and Parameters

B.1. Environmental Parameters

B.1.1. Bathymetry

Bathymetry throughout the modelled area was extracted from the Australian Bathymetry and Topography Grid, a 9 arc-second grid rendered for Australian waters (Whiteway 2009). Bathymetry data were re-gridded and combined onto a Map Grid of Australia (MGA) coordinate projection (Zone 54) with a regular grid spacing of 250 × 250 m (Figure B-1).

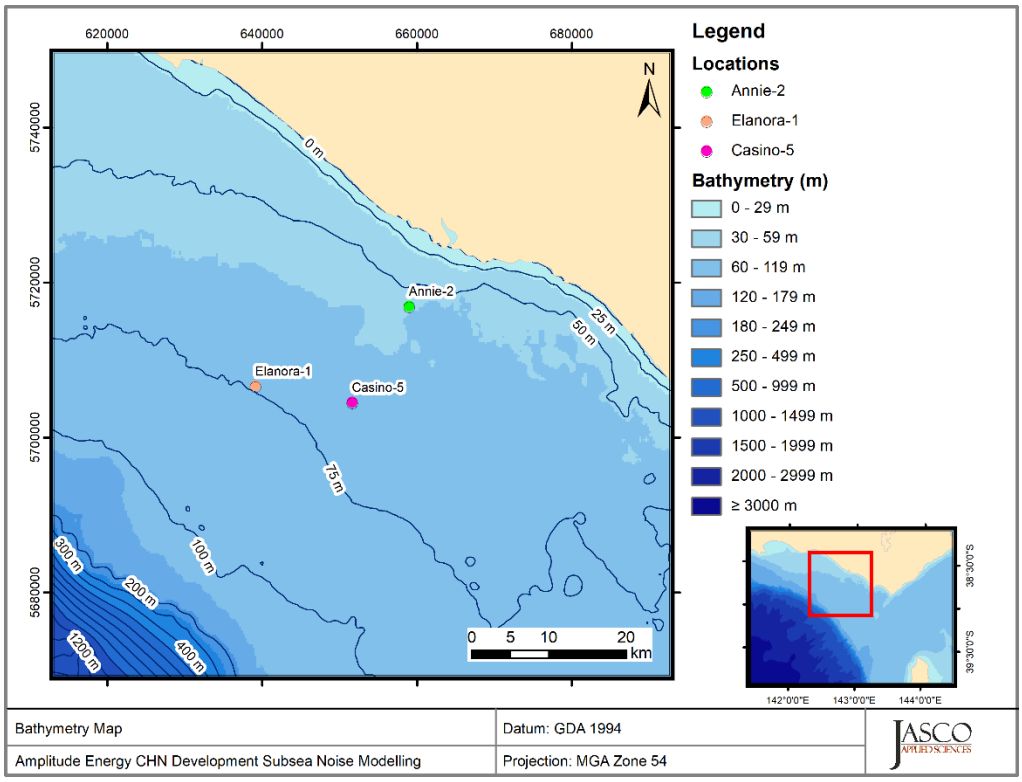

Figure B-1. Bathymetry in the modelled area.

B.1.2. Sound Speed Profile

The sound speed profile in the area was derived from temperature and salinity profiles from the U.S. Naval Oceanographic Office's Generalized Digital Environmental Model V 3.0 (GDEM; Teague et al. 1990, Carnes 2009). GDEM provides an ocean climatology of temperature and salinity for the world's oceans on a latitude-longitude grid with 0.25° resolution, with a temporal resolution of one month, based on global historical observations from the U.S. Navy's Master Oceanographic Observational Data Set (MOODS). The climatology profiles include 78 fixed depth points to a maximum depth of 6800 m (where the ocean is that deep). The GDEM temperature-salinity profiles were converted to sound speed profiles according to Coppens (1981).

Mean monthly sound speed profiles were derived from the GDEM profiles at distances less than 40 km around the modelled site. The August sound speed profile is expected to be most favourable to longer-range sound propagation across the entire year which was determined by modelling a reduced number of transects for every month and comparing the ranges to thresholds. As such, August was

selected for sound propagation modelling to ensure precautionary estimates of distances to received sound level thresholds. Figure B-2 shows the resulting profile, which was used as input to the sound propagation modelling.

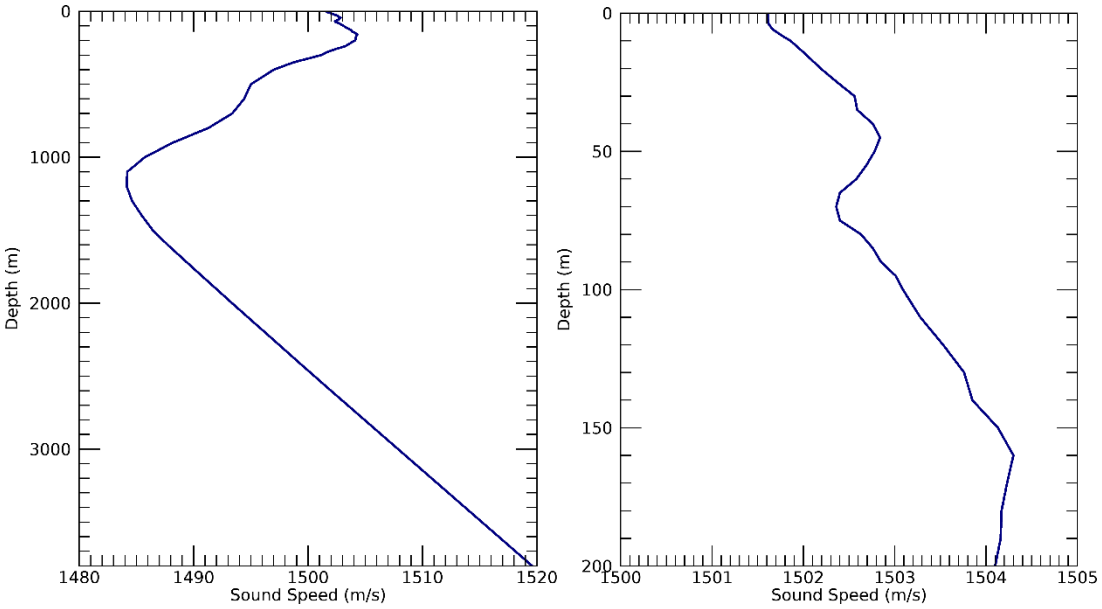

Figure B-2. The modelling sound speed profile corresponding to August: full profile (left) and top 200 m (right) Profiles are calculated from temperature and salinity profiles from Generalized Digital Environmental Model V 3.0 (GDEM; Teague et al. 1990, Carnes 2009).

B.1.3. Geoacoustics

The propagation model used in this study consider a single geoacoustic profile for each well site area. Similar to previous modelling studies in the region (Wood and McPherson 2018, Koessler et al. 2020, Matthews et al. 2020, McPherson et al. 2021), two seabed types were considered for modelling. Both seabed profiles are indicative of seabed environments located on the continental shelf of the Otway region and are consistent with larger scale geological data and interpretations of the Australian continental shelf environment (James and Bone 2010).

The geoacoustic profiles Elanora-1, Casino-5 and Annie-2 well sites were generated using lithographic descriptions from the geotechnical and geophysical reports supplied by the client and considering previous underwater acoustic modelling and measurement studies (Koessler et al. 2020, Matthews et al. 2020, McPherson et al. 2021). Within the vicinity of Annie-2 the seabed is likely to consist of a well-cemented calcarenite caprock over a semi-cemented calcarenite. Near the Elanora-1 and Casino-5 locations, the seabed is likely to consist of a thin layer of coarse sand overlying a similar calcarenite structure. This sand layer may not be consistently present. In all cases, the calcarenite layering likely extended to many hundreds of metres below the seafloor.

Table B-1 and Table B-2 present the geoacoustic profiles used modelled sites in each respective development area.

Table B-1. Geoacoustic profile for Annie-2 associated modelled sites.

Depth below seafloor (m)	Material	Density (g/cm^3)	P-wave speed (m/s)	P-wave attenuation (dB/λ)	S-wave speed (m/s)	S-wave attenuation (dB/λ)
0-1	Well-cemented carbonate caprock	2.7	2600	0.5	1200	0.5
1-20	Increasingly cemented calcarenite	2.2	2000	0.30	900	0.27
20-40		2.3	2120	0.34	960	0.31
40-60		2.4	2240	0.38	1020	0.36
60-80		2.5	2360	0.42	1080	0.41
80-10		2.6	2480	0.46	1140	0.45
>100	Well-cemented calcarenite	2.7	2600	0.50	1200	0.50

Table B-2. Geoacoustic profile for Elanora-1 and Casino-5 associated modelled sites.

Depth below seafloor (m)	Material	Density (g/cm^3)	P-wave speed (m/s)	P-wave attenuation (dB/λ)	S-wave speed (m/s)	S-wave attenuation (dB/λ)
0-1.5	Coarse carbonate sand	2.0	1800	0.85	300	3.68
1.5-2.5	Well-cemented carbonate caprock	2.7	2600	0.50	1200	0.50
2.5-22.5	Increasingly cemented calcarenite	2.2	2000	0.3	900	0.27
22.5-42.5		2.3	2120	0.34	960	0.31
42.5-62.5		2.4	2240	0.38	1020	0.36
62.5-82.5		2.5	2360	0.42	1080	0.41
82.5-102.5		2.6	2480	0.46	1140	0.45
>102.5	Well-cemented calcarenite	2.7	2600	0.50	1200	0.50

B.2. Estimated Vessel Source Levels

At the time of this study, the Platform Support Vessel (ISV) and Dive Support Vessel (DSV) to be used in the project were unconfirmed and a generic source level was proposed. Similar to the approach detailed Connell et al. (2021) in different vessels were identified as either potential ISV or RDSV vessels, therefore the source level and spectrum used to represent any of these four vessels was based on the nominal specifications for all indicated vessels, due to similarity in dimensions and total installed power ratings. This nominal vessel has an 89.2 m overall length, 20 m breadth, and 7.6 m maximum draft.

A main propulsion system is this generic vessel comprised of the following specifications.

Two stern propellers with

- 3.2 m propeller diameter,
- 165 rpm nominal propeller speed,

- 2,200 kW maximum continuous power input, and
- Typical DP operation at 26% MRC.

Additional thruster modules active during DP operations may include bow tunnel thrusters and a bow azimuth thruster. The two bow tunnel thrusters for the generic vessel were comprised of:

- 2.0 m propeller diameter,
- 318 rpm nominal propeller speed,
- 1,000 kW maximum continuous power input, and
- Typical DP operation at 17% MRC.

The bow azimuth thruster generic vessel was comprised of:

- 1.65 m propeller diameter,
- 373 rpm nominal propeller speed,
- 830 kW maximum continuous power input, and
- Typical DP operation at 21% MRC

Estimates of the acoustic source levels were based on the parameters of the propulsion system together with the method descripted in Appendix B.2.1, and the percent of Maximum Continuous Rating (MCR) for the vessel operating at during typical DP operations, as provided by the potential vessel operators.

B.2.1. Thruster Source Level Estimation

A vessel equipped with propellers/thrusters has two primary sources of sound that propagate from the unit: the machinery and the propellers. For thrusters operating in the heavily loaded conditions, the acoustic energy generated by the cavitation processes on the propeller blades dominates (Leggat et al. 1981). The sound power from the propellers is proportional to the number of blades, the propeller diameter, and the propeller tip speed.

Based on an analysis of acoustic data, Ross (1976) provided the following formula for the sound levels from a vessel's propeller, operating in calm, open ocean conditions:

$$L_{100} = 155 + 60\log(u/25) + 10\log(B/4)\,, \qquad \text{(B-1)}$$

where L_{100} is the spectrum level at 100 Hz, u is the propeller tip speed (m/s), and B is the number of propeller blades. Equation B-1 gives the total energy produced by the propeller cavitation at frequencies between 100 Hz and 10 kHz. This equation is valid for a propeller tip speed between 15 and 50 m/s. The spectrum is assumed to be flat below 100 Hz. Its level is assumed to fall off at a rate of −6 dB per octave above 100 Hz (Figure B-3).

Another method of predicting the source level of a propeller was suggested by Brown (1977). For propellers operating in heavily loaded conditions, the formula for the sound spectrum level is:

$$\mathrm{SL}_B = 163 + 40\log D + 30\log N + 10\log B + 20\log f + 10\log(A_c/A_D)\,, \qquad \text{(B-2)}$$

where D is the propeller diameter (m), N is the propeller revolution rate per second, B is the number of blades, A_C is the area of the blades covered by cavitation, and A_D is the total propeller disc area. Similar to Ross's approach, the spectrum below 100 Hz is assumed to be flat. The tests with a naval propeller operating at off-design heavily loaded conditions showed that Equation B-2 should be used with a value of $(A_c/A_D) = 1$ (Leggat et al. 1981).

The combined source level for multiple thrusters operating together can be estimated using the formula:

$$\mathrm{SL}_{\mathrm{total}} = 10\log_{10}\sum_{i} 10^{\frac{SL_i}{10}}, \tag{B-3}$$

where $SL_{1,\ldots,N}$ are the source levels of individual thrusters. If the vessel is equipped with the same type of thrusters, the combined source level can be estimated using the formula:

$$\mathrm{SL}_N = \mathrm{SL} + 10\log N \tag{B-4}$$

where N is the total number of thrusters of the same type.

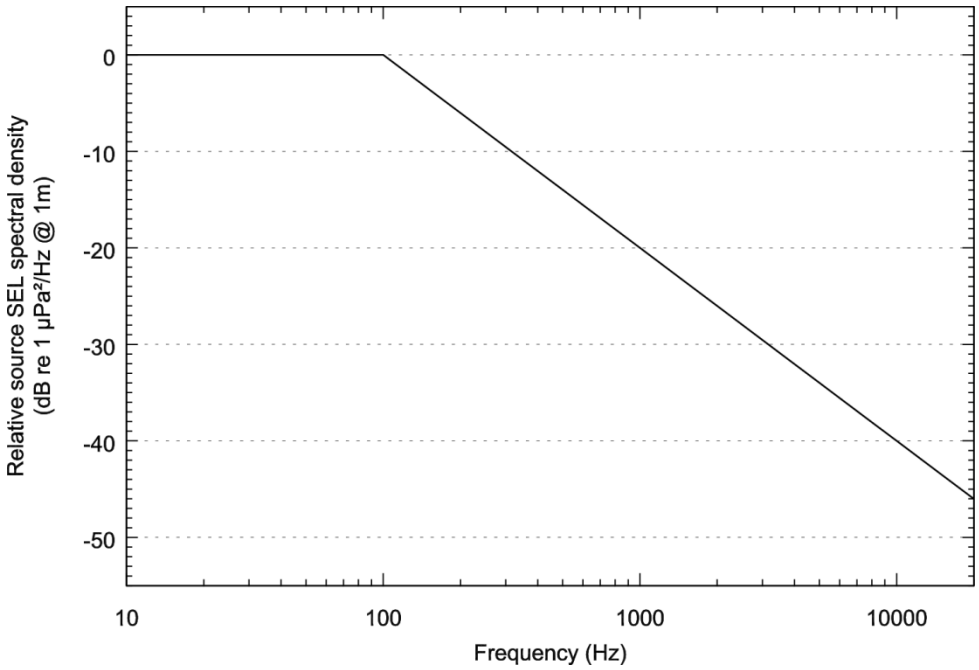

Figure B-3. Estimated sound spectrum from cavitating propeller (Leggat et al. 1981).

B.2.2. Estimating Sound Field from Moving Vessels

During vessel transit, new sound energy is constantly being introduced to the environment. The noise footprint for the transiting vessels considered in this report were estimated by modelling the 1-s SEL for the vessel at one location, and by translating and summing these footprints along the vessel transit routes. The vessel locations along the tracks were spaced uniformly, with an approximate step of $\Delta s \approx 100$ m.

The SEL sound field at any given point along the path is dependent upon the duration of exposure, which with a fixed footprint spacing depends upon the speed of the vessel during each segment of the transit. The 1-s SEL footprint at each vessel location (i) were therefore scales based on the speed of the vessel following:

$$\mathrm{SEL}_i = \mathrm{SEL}_{1s} + 10\log_{10}\left(\frac{\Delta s}{v}\right). \tag{B-5}$$

where v represents the vessel speed in m/s.

The present method acceptably reflects large-scale sound propagation features, primarily dependent on water depth, which dominate the cumulative field and is thus considered to provide a meaningful estimate of the SEL_{24h} field.

B.3. Sound Propagation Models

B.3.1. Propagation Loss

The propagation of sound through the environment was modelled by predicting the acoustic propagation loss—a measure, in decibels, of the decrease in sound level between a source and a receiver some distance away. Geometric spreading of acoustic waves is the predominant way by which propagation loss occurs. Propagation loss also happens when the sound is absorbed and scattered by the seawater, and absorbed scattered, and reflected at the water surface and within the seabed. Propagation loss depends on the acoustic properties of the ocean and seabed; its value changes with frequency.

If the acoustic energy source level (ESL), expressed in dB re 1 $\mu Pa^2 \cdot s\ m^2$, and propagation loss (PL), in units of dB, at a given frequency are known, then the received level (RL) at a receiver location can be calculated in dB re 1 $\mu Pa^2 \cdot s$ by:

$$RL = SL - PL. \tag{B-6}$$

B.3.2. MONM-BELLHOP

Long-range sound fields were computed using JASCO's Marine Operations Noise Model (MONM). While other models may be more accurate for steep-angle propagation in high-shear environment, MONM is well suited for effective longer-range estimation. This model computes sound propagation at frequencies of 10 Hz to 1.6 kHz via a wide-angle parabolic equation solution to the acoustic wave equation (Collins 1993) based on a version of the U.S. Naval Research Laboratory's Range-dependent Acoustic Model (RAM), which has been modified to account for a solid seabed (Zhang and Tindle 1995). MONM computes sound propagation at frequencies > 1.6 kHz via the BELLHOP Gaussian beam acoustic ray-trace model (Porter and Liu 1994).

The parabolic equation method has been extensively benchmarked and is widely employed in the underwater acoustics community (Collins et al. 1996). MONM accounts for the additional reflection loss at the seabed, which results from partial conversion of incident compressional waves to shear waves at the seabed and sub-bottom interfaces, and it includes wave attenuations in all layers. MONM incorporates the following site-specific environmental properties: a bathymetric grid of the modelled area, underwater sound speed as a function of depth, and a geoacoustic profile based on the overall stratified composition of the seafloor.

MONM computes acoustic fields in three dimensions by modelling propagation loss within two-dimensional (2-D) vertical planes aligned along radials covering a 360° swath from the source, an approach commonly referred to as N×2-D. These vertical radial planes are separated by an angular step size of $\Delta\theta$, yielding N = 360°/$\Delta\theta$ number of planes (Figure B-4).

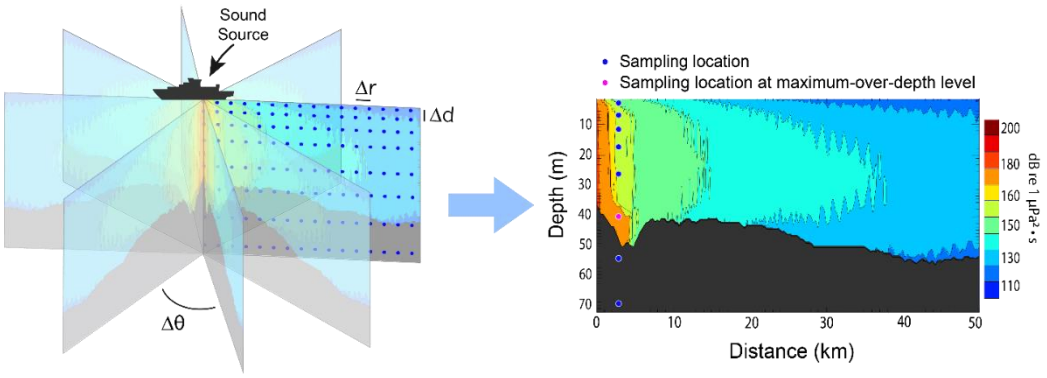

Figure B-4. The N×2-D and maximum-over-depth modelling approach used by MONM.

MONM treats frequency dependence by computing acoustic propagation loss at the centre frequencies of decidecade bands. Sufficiently many decidecade frequency-bands, starting at 10 Hz, are modelled to include most of the acoustic energy emitted by the source. At each centre frequency, the propagation loss is modelled within each of the N vertical planes as a function of depth and range from the source. The decidecade received per-second SEL are computed by subtracting the band propagation loss values from the directional source level in that frequency band. Composite broadband received per-second SEL are then computed by summing the received decidecade levels.

The received 1-s SEL sound field within each vertical radial plane is sampled at various ranges from the source, generally with a fixed radial step size. At each sampling range along the surface, the sound field is sampled at various depths, with the step size between samples increasing with depth below the surface. The step sizes are chosen to provide increased coverage near the depth of the source and at depths of interest in terms of the sound speed profile. For areas with deep water, sampling is not performed at depths beyond those reachable by marine mammals. The received per-second SEL at a surface sampling location is taken as the maximum value that occurs over all samples within the water column, i.e., the maximum-over-depth received per-second SEL. These maximum-over-depth per-second SEL are presented as colour contours around the source.

B.3.3. Wavenumber Integration Model

VSTACK computes propagation loss versus depth and range for arbitrarily layered, range-independent acoustic environments using the wavenumber integration approach to solve the exact (range-independent) acoustic wave equation. This model is valid over the full angular range of the wave equation and can fully account for the elasto-acoustic properties of the sub-bottom. Wavenumber integration methods are extensively used in the field of underwater acoustics and seismology where they are often referred to as reflectivity methods or discrete wavenumber methods. VSTACK computes sound propagation in arbitrarily stratified water and seabed layers by decomposing the outgoing field into a continuum of outward-propagating plane cylindrical waves. Seabed reflectivity in the model is dependent on the seabed layer properties: compressional and shear wave speeds, attenuation coefficients, and layer densities. Additionally, VSTACK assumes range-invariant bathymetry with a horizontally stratified medium (i.e., a range-independent environment) which is azimuthally symmetric about the source. Typically, VSTACK is best suited to modelling the sound field near the source; however, it can also be used in conjunction with MONM to account for additional bottom loss in high shear speed seabeds as described in Section B.3.4.

B.3.4. Limestone Seabed Propagation Loss

For sites where the seabed geoacoustic model consisted of bare calcarenite, an additional broadband correction was applied to the propagation loss results from MONM to better account for the additional

propagation loss associated with a limestone (calcarenite) seabed (Duncan et al. 2009). The accuracy of the broadband calculated propagation loss for the South-eastern continental shelf of Australia depends significantly upon the frequency content of the radiating sound source together with thickness of any overlying layers of unconsolidated sediment (e.g. sand) on top of calcarenite likely to occur within the region.

In general, the thinner the sand layer, the greater the overall propagation loss. When comparing SPL data McPherson et al. (2021), higher rates of propagation loss were observed and were attributed to, an absorptive carbonate (calcarenite) seabed. In this study, comparisons were conducted using JASCO's Marine Operations Noise Model (MONM), a wide-angle parabolic equation model which applies the BELLHOP Gaussian beam acoustic ray-trace model at higher frequencies, and JASCO's wavenumber integration model (VSTACK, Appendix B.3.3) which can fully account for the elasto-acoustic properties of the sub-bottom.

To account for the additional propagation loss associated with a cemented calcarenite seabed, an additional broadband correction was applied to the propagation loss results from MONM to account for the higher rates of loss when the full for the elasto-acoustic properties of the sub-bottom are consider. The differences between the broadband SPL from MONM and VSTACK were extracted at the same modelled ranges and depths that corresponded range independent predictions. The 90th percentile of the resultant dB differences in 250 m range bins were selected to generate a correction function for each individual site/source to be modelled. The conversion functions were applied after the propagation loss calculation from MONM but before summing decidecade band levels, gridding, and radii calculations for each modelled site in each modelled scenario considered.

B.4. Estimating Range to Thresholds Levels

Sound level contours were calculated based on the underwater sound fields predicted by the propagation models, sampled by taking the maximum value over all modelled depths above the sea floor for each location in the modelled region. The predicted distances to specific levels were computed from these contours. Two distances relative to the source are reported for each sound level: 1) R_{max}, the maximum range to the given sound level over all azimuths, and 2) $R_{95\%}$, the range to the given sound level after the 5% farthest points were excluded (see examples in Figure B-5).

The $R_{95\%}$ is used because sound field footprints are often irregular in shape. In some cases, a sound level contour might have small protrusions or anomalous isolated fringes. This is demonstrated in the image in Figure B-5(a). In cases such as this, where relatively few points are excluded in any given direction, R_{max} can misrepresent the area of the region exposed to such effects, and $R_{95\%}$ is considered more representative. In strongly asymmetric cases such as shown in Figure B-5(b), on the other hand, $R_{95\%}$ neglects to account for significant protrusions in the footprint. In such cases R_{max} might better represent the region of effect in specific directions. Cases such as this are usually associated with bathymetric features affecting propagation. The difference between R_{max} and $R_{95\%}$ depends on the source directivity and the non-uniformity of the acoustic environment.

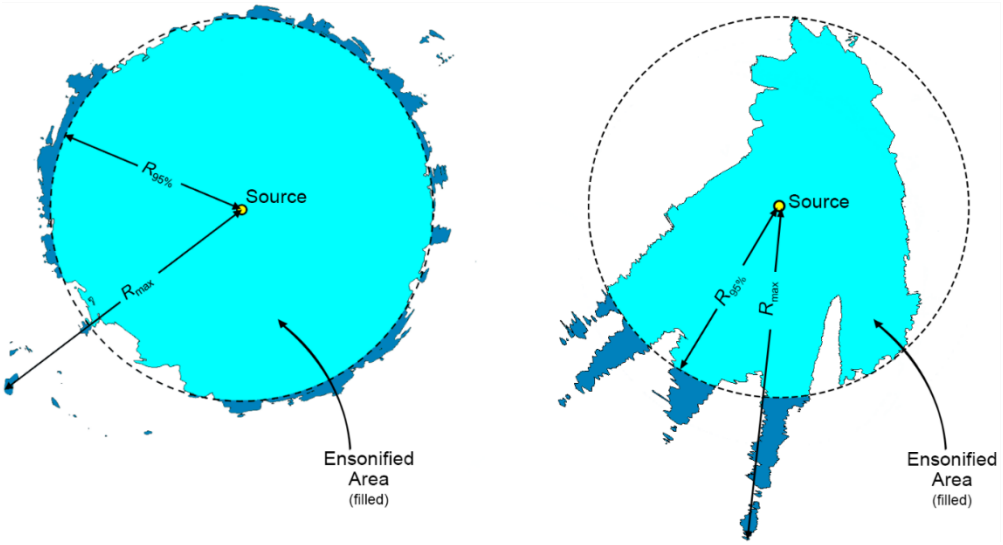

Figure B-5. Sample areas ensonified to an arbitrary sound level with R_{max} and $R_{95\%}$ ranges shown for two different scenarios. (a) Largely symmetric sound level contour with small protrusions. (b) Strongly asymmetric sound level contour with long protrusions. Light blue indicates the ensonified areas bounded by $R_{95\%}$; darker blue indicates the areas outside this boundary which determine R_{max}.

B.5. Model Validation Information

Predictions from JASCO's propagation models (MONM, FWRAM, and VSTACK) have been validated against experimental data from a number of underwater acoustic measurement programs conducted by JASCO globally, including the United States and Canadian Artic, Canadian and southern United States waters, Greenland, Russia and Australia (e.g. Hannay and Racca 2005, Aerts et al. 2008, Funk et al. 2008, Ireland et al. 2009, O'Neill et al. 2010, Warner et al. 2010, Racca et al. 2012a, Racca et al. 2012b, Matthews and MacGillivray 2013, Martin et al. 2015, Racca et al. 2015, Martin et al. 2017a, Martin et al. 2017b, Warner et al. 2017, MacGillivray 2018, McPherson et al. 2018, McPherson and Martin 2018, Quijano et al. 2018).

In addition, JASCO has conducted measurement programs associated with a significant number of anthropogenic activities that have included internal validation of the modelling (including McCrodan et al. 2011, Austin and Warner 2012, McPherson and Warner 2012, Austin and Bailey 2013, Austin et al. 2013, Zykov and MacDonnell 2013, Austin 2014, Austin et al. 2015, Austin and Li 2016, Martin and Popper 2016, Austin et al. 2018, Beach Energy Limited 2020).

Appendix 8 - Relevant Persons Consultation Report

Appendix 8 - Consultation Report and List of Relevant Persons

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1.0 Identification of Relevant Persons – 25(1)(a) and (b)

Table 1-1: Identification of Relevant Persons – 25(a) and (b)

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
Commonwealth or State agency or authority 25(1)(a)								
26	Australian Border Force (ABF) (Maritime Border Command-MBC))	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	Responsible for coordinating maritime security	Activities in offshore Australian waters may be relevant to the ABF as security issues may evolve in any offshore location.	2	Existing database
29	Australian Communications and Media Authority (ACMA)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	Regulator for communications and media services.	Activities may be relevant to ACMA as there may be potential impacts and risks to submarine cables.	2	Existing database
97	Australian Department of Agriculture, Fisheries and Forestry (DAFF) - Biosecurity (marine pests)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	DAFF has primary policy and regulatory responsibility for managing marine pest biosecurity through administering the Biosecurity Act.	Activities may be relevant to DAFF as they may present a biosecurity risk.	2	Existing database
98	Australian Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries (Note- during consultation for the ASP EP, email for DAFF Biosecurity (vessels, aircraft and personnel was also directed to the DAFF Fisheries address)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	The Department of Agriculture, Fisheries and Forestry (DAFF) has primary policy responsibility for promoting the biological, economic and social sustainability of Australian fisheries.	Activities may be relevant to DAFF as they will be carried out over numerous Commonwealth fisheries, potentially impacting Commonwealth fishery licenced operators, and/or commercial fish stock. Listed as a relevant Commonwealth agency in NOPSEMA's guideline "Consultation with Commonwealth agencies with responsibilities in the marine area" dated 10 January 2024.	2	Existing database
101	Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Sea Dumping Section	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	DCCEEW has responsibility for the Environment Protection (Sea Dumping) Act 1981 (Sea Dumping Act), which implements Australia's commitments as a contracting party to the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972.	Activities may be relevant to DCCEEW with respect to waste disposal and/or any plug and abandonment activities. Listed as a relevant Commonwealth agency in NOPSEMA's guideline "Consultation with Commonwealth agencies with responsibilities in the marine area" dated 10 January 2024.	2	Existing database
102	Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Underwater Cultural Heritage	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	DCCEEW administers the Underwater Cultural Heritage Act 2018 (UCH Act). DCCEEW regulates activities in relation to protected underwater cultural heritage (UCH) within Australian waters including the Commonwealth marine area.	Activities may be relevant to DCCEEW as there is potential impact to underwater cultural heritage. Listed as a relevant Commonwealth agency in NOPSEMA's guideline "Consultation with Commonwealth agencies with responsibilities in the marine area" dated 10 January 2024.	2	Existing database
105	Australian Department of Defence (DOD)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	Responsible for defending Australia and its national interests. DoD's role requires not only naval warfare capabilities but also disaster relief, search and rescue, fisheries protection and border patrol training capabilities.	Activities may be relevant to DoD as there is potential for overlap with defence activities such as training or other exercises, or there may be potential for UXO. Listed as a relevant Commonwealth agency in NOPSEMA's guideline "Consultation with Commonwealth agencies with responsibilities in the marine area" dated 10 January 2024.	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
31	Australian Fisheries Management Authority (AFMA)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	Responsible for managing Commonwealth fisheries	Activities may be relevant to AFMA as they will be carried out over numerous Commonwealth fisheries, potentially impacting Commonwealth fishery licenced operators and/or commercial fish stock. Listed as a relevant Commonwealth agency in NOPSEMA's guideline "Consultation with Commonwealth agencies with responsibilities in the marine area" dated 10 January 2024.	2	Existing database
106	Australian Hydrographic Service (AHS) (sits under Australian Hydrographic Office (AHO) - (DoD)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	The Australian Hydrographic Office (AHO) is part of DoD and is the entity responsible for the provision of hydrographic services to Australia, under the Safety of Life at Sea (SOLAS) Convention and the Navigation Act 2012. This includes the publication and distribution of nautical products and other information required for the safety of ships navigating in Australian waters.	Activities may be relevant to AHO as there are vessel activities that would require notices to mariners, and there may be requirements for chart updates. Listed as a relevant Commonwealth agency in NOPSEMA's guideline "Consultation with Commonwealth agencies with responsibilities in the marine area" dated 10 January 2024.	2	Existing database
33	Australian Maritime Safety Authority (AMSA)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	Statutory agency for vessel safety and navigation in Commonwealth waters.	Activities may be relevant to AMSA as vessel operations are involved, there is potential for interactions with other vessels, and AMSA have a role in maritime emergency response. Listed as a relevant Commonwealth agency in NOPSEMA's guideline "Consultation with Commonwealth agencies with responsibilities in the marine area" dated 10 January 2024.	2	Existing database
459	Corangamite Catchment Management Authority	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	State dept or agency	The Corangamite Catchment Management Authority manages the Corangamite Regional Catchment Strategy (RCS) - a high-level blueprint for catchment health. It provides a strategic, integrated framework for natural resource management in the Corangamite Catchment Management Authority's region of Victoria.	The Corangamite RCS overlaps the Consultation Focus Area.	2	Other operator Otway EP
130	Director of National Parks (DNP)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	The Director of National Parks (DNP) is the statutory authority responsible for administration, management and control of Australian marine parks (AMPs).	Activities may be relevant to the DNP as in the unlikely event of a hydrocarbon release, there may be impacts on Australian Marine Parks. Listed as a relevant Commonwealth agency in NOPSEMA's guideline "Consultation with Commonwealth agencies with responsibilities in the marine area" dated 10 January 2024.	2	Existing database
157	Fisheries Research and Development Corporation (FRDC)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	Commonwealth dept or agency	The Corporation is a co-funded partnership between the Australian Government and fisheries and aquaculture. It is a statutory corporation under the Primary Industries Research and Development Act 1989 (the PIRD Act) and is responsible to the Minister for Agriculture, Fisheries and Forestry.	Activities may be relevant to FRDC as they will be carried out over numerous Commonwealth fisheries, potentially impacting Commonwealth fishery licenced operators, and/or commercial fish stock. Activities could also affect any research being conducted in the area.	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
460	Heritage Victoria	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	State dept or agency	Heritage Victoria regulates and enforces the Victorian Heritage Act 2017 and also serves as the Commonwealth delegate. for DCCEEW for heritage matters in Commonwealth waters offshore Victoria.	Activities may be relevant to Heritage Victoria due to potential interactions with submerged cultural heritage.	2	Other operator Otway EP
458	SA Department for Infrastructure and Transport (DIT)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	State dept or agency	The Department for Infrastructure and Transport (DIT) is the Control Agency for Marine Pollution (Coastal) and is responsible for the management of marine pollution incidents in coastal waters.	Activities may be relevant to SA DIT due to their key role in emergency response, including oil spill response in the unlikely event of a hydrocarbon release that may threaten South Australian waters.	2	Existing database
366	Tasmanian EPA	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	State dept or agency	Responsible for preparedness and responding to oil and chemical spills in Tasmanian waters. Spill Response 'Control Agency' for any spill that enters (or threatens to enter Tasmanian coastal waters). Where relevant the OPEP sets out arrangements for working with the EPA in the event of a spill.	Activities may be relevant to Tasmanian EPA due to their key role in emergency response, including oil spill response in the unlikely event of a hydrocarbon release that may threaten Tasmanian waters.	2	Existing database
380	Transport for NSW	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	State dept or agency	Is NSW Statutory Authority for coordination of spill response in NSW waters. Is responsible for responding to any shipping incident or marine oil or chemical spill along the coast of NSW.	Activities may be relevant to Transport for NSW due to their key role in emergency response, including oil spill response in the unlikely event of a hydrocarbon release that may threaten NSW waters.	2	Existing database
156	Victorian Department of Premier and Cabinet (DPC) First Peoples - State Relations	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	State dept or agency	First Peoples – State Relations is a group within the Department of Premier and Cabinet, responsible for nation-leading work in the areas of cultural rights, self-determination, treaty and truth – an extensive program of priority work with First Peoples.	Activities may be relevant to the DPC First Peoples-State Relations due to potential impacts on submerged cultural heritage.	2	Existing database
127	Victorian Department of Transport and Planning (DTP)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	State dept or agency	Responsible for marine pollution response arrangements in Victorian jurisdiction. Coordinate advice with other state agencies involved in marine pollution response including Department of Energy, Environment and Climate Action and Port Authorities.	Activities may be relevant to Victorian DTP due to their key role in emergency response, including oil spill response in the unlikely event of a hydrocarbon release that may threaten Victorian waters.	2	Existing database
393	Victorian Fisheries Authority (VFA)	25(1)(a) State and Cth	Commonwealth or State Agency or Authority	State dept or agency	Independent statutory authority established to effectively manage Victoria's state managed fisheries resources.	Activities may be relevant to the VFA due to overlap with state managed fisheries. In addition, in the unlikely event of a hydrocarbon spill, fishing, marketability of catch and fish stocks may be affected in state managed fisheries.	2	Existing database
The Department of the responsible State Minister 25(1)(b)								

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
272	Parks Victoria	25(1)(a) State and Cth	The Department of the Responsible Minister	State dept or agency	Parks Victoria is a statutory authority of the Victorian Government, within the DEECA portfolio, acting in accordance with the Parks Victoria Act 2018. Parks Victoria is responsible for managing a diverse estate of more than 4 million hectares including 3,000 land and marine parks and reserves making up 18 per cent of Victoria's landmass, 75 per cent of Victoria's wetlands and 70 per cent of Victoria's coastline.	Activities may be relevant to Parks Victoria, as in the unlikely event of a hydrocarbon release Victorian marine parks may be affected.	2	Existing database
115	Victorian Department of Energy, Environment and Climate Action (DEECA) - Biosecurity and Agriculture Services	25(1)(a) State and Cth	The Department of the Responsible Minister	State dept or agency	Manages and advises on biosecurity within Victoria including vessels in state waters/calling into ports.	Activities may be relevant to DEECA due to potential biosecurity and environmental risks.	2	Existing database
107	Victorian Department of Energy, Environment and Climate Action – Earth Resources Regulation (DEECA ERR)	25(1)(b) Resp State	The Department of the Responsible Minister	State dept or agency	Joint Authority Member for offshore Victorian waters including granting, refusal or renewal of offshore petroleum titles, variation of titles and title terms, etc. Regulate petroleum activities in Victorian State waters.	Under Regulation 25(1)(b) they are the Department of the responsible Minister.	2	Existing database
573	Victorian Department of Energy, Environment and Climate Action - Planning and Environment (DEECA PEA)	25(1)(a) State and Cth	The Department of the Responsible Minister	State dept or agency	DEECA planning and environment assessment – energy team is a statewide team, that can provide key contacts for environmental responses for various referrals and approvals in the regions for planning related to marine, native vegetation, marine and coastal act consents, land owner and public land manager consents.	Activities may be relevant to DEECA PEA as in the unlikely event of a hydrocarbon release Victorian coastal areas may be affected.	2	Existing database

2.0 Identification of Relevant Persons – 25(1)(d)

Table 2-1 Identification of Relevant Persons - 25(1)(d)

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
Business, industry and research 25(1)(d)								
439	12 Apostles Cottages	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
1	12 Apostles Helicopters	25(1)(d)	Business, industry and research	Tourism	Port Campbell based tourism operator that offers helicopter flights over the 12 Apostles area.	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
						may result in temporary access issues and loss of visual amenity.		
539	54 on Bank	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
540	A1 Motel - Port Fairy	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
5	AARNet Pty Ltd	25(1)(d)	Business, industry and research	Subsea infrastructure	Provides telecommunications, cyber security, data and collaboration services and network with focus on research and education sector.	Potential impact to subsea cables.	2	Existing database
11	Academy of Scuba	25(1)(d)	Business, industry and research	Coastal business	Ocean diving training centre	In the event of a hydrocarbon spill, business may be commercially affected.	2	Existing database
601	Admella Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
497	Allansford Hotel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
593	Allestree Beach Holiday Units	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
12	Allfresh Seafood	25(1)(d)	Business, industry and research	Seafood business	Processor of Southern Rock Lobster from waters offshore Port Fairy & Warrnambool.	Fishers may be affected during operations due to access restrictions, and in the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
446	Anchors	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
604	Annesley House	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
15	Apollo Bay Chamber of Commerce	25(1)(d)	Business, industry and research	Commercial group	The Chamber partners with local businesses to do better business and promote the local area.	In the event of a hydrocarbon spill, local businesses may be commercially affected.	2	Existing database
16	Apollo Bay Dive Centre and Surf n Fish	25(1)(d)	Business, industry and research	Seafood business	Ocean based activities for locals and visitors	Fishers may be affected during operations due to access restrictions, and in the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected, as may general tourism.	2	Existing database
466	Apollo Bay Fishing & Adventure Tours	25(1)(d)	Business, industry and research	Fisheries business	Local fishing charter	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities may result in temporary access issues and loss of visual amenity.	2	Other operator Otway EP
465	Apollo Bay Fishing Charters	25(1)(d)	Business, industry and research	Tourism	Local fishing charters and sunset tours	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities may result in temporary access issues and loss of visual amenity.	2	Other operator Otway EP
21	Apollo Bay Surf & Kayak	25(1)(d)	Business, industry and research	Coastal business	Business offering marine based activities and rental services	In the event of a hydrocarbon spill, business may be commercially affected.	2	Existing database
23	Apollo Bay Visitor Information Centre	25(1)(d)	Business, industry and research	Tourism	Providing information for tourists to the region.	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
						result in temporary access issues and loss of visual amenity.		
541	Ashmont Motor Inn & Apartments	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
606	Bagout Tuna Fishing Charters	25(1)(d)	Business, industry and research	Fisheries business	Local fishing charter	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Project web search
49	Beach Energy	25(1)(d)	Business, industry and research	Oil and Gas-offshore	Oil and gas operator with interests on the offshore Otway Basin	Offshore energy operators need to consider cumulative impacts, simultaneous operations, and potential emergency events.	2	Existing database
498	Best Western Colonial Village Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
591	BIG4 Narrawong Island Holiday Park	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
542	BIG4 Port Fairy Holiday Park	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
508	Blue Whale Motor Inn & Apartments	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
57	Blue Whale Study	25(1)(d)	Business, industry and research	Other research	International research collaboration interested in pygmy blue whale migration in south-east Australia.	Researchers may deploy equipment in the marine environment that could be affected by operations or emergency events. The activity may also need to be considered when analysing collected scientific data.	2	Existing database
59	Boating Industry Association of Victoria	25(1)(d)	Business, industry and research	Peak body	Peak body for the marine sector. BIAV represents its members and supports the 200,000 registered boat owners, 400,000 marine license holders, and 900,000 boating participants in Victoria each year.	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, coastal areas may be affected.	2	Existing database
63	Bridgeport Pty Ltd (New Hope Group)	25(1)(d)	Business, industry and research	Oil and Gas-offshore	Oil and gas operator with interests on the offshore Otway Basin	Offshore energy operators need to consider cumulative impacts, simultaneous operations, and potential emergency events.	2	Existing database
569	BW Digital	25(1)(d)	Business, industry and research	Subsea infrastructure	Submarine cable operator	Potential impact to subsea cables	2	Other stakeholder
614	Casuarina Cabins	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
543	Central Motel Port Fairy	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
73	CGG	25(1)(d)	Business, industry and research	Oil and Gas-offshore	Multi-client seismic data acquisition company with interests in the Otway Basin.	Offshore energy operators need to consider cumulative impacts, simultaneous operations, and potential emergency events.	2	Existing database
544	Cherry Plum Cottages	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
509	City Heart Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
545	Clonmara Country House & Cottages	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
76	Coastal Planning	25(1)(d)	Business, industry and research	Coastal business	Services include tribunal appeals for planning, development and subdivision applications, council strategic planning advice, planning hearing discussions for planning scheme amendments and general statutory advice.	In the event of a hydrocarbon spill, local businesses may be commercially affected.	2	Existing database
499	Comfort Inn On Raglan	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
516	Comfort Inn Warrnambool International	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
505	Commercial Hotel Panmure	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
613	Committee for Portland	25(1)(d)	Business, industry and research	Commercial group	Local volunteer community group committed to the promotion and development of the community.	In the event of a hydrocarbon spill, local businesses may be commercially affected.	2	Project web search
84	Conoco Phillips	25(1)(d)	Business, industry and research	Oil and Gas-offshore	Oil and gas operator with interests on the offshore Otway Basin	Offshore energy operators need to consider cumulative impacts, simultaneous operations, and potential emergency events.	2	Existing database
500	Convent at Koroit	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
517	Darriwill Farm Warrnambool	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
93	Deakin University - School of Life and Environmental Sciences (Warrnambool Campus)	25(1)(d)	Business, industry and research	University research	Carries out research offshore Victoria	Researchers may deploy equipment in the marine environment that could be affected by operations or emergency events. The activity may also need to be considered when analysing collected scientific data.	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
501	Deep Blue Hotel & Hot Springs	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
133	Diving Industry of Victoria	25(1)(d)	Business, industry and research	Peak body	The Dive Industry Association of Victoria (DIVA) was established to promote the sport of diving in Victoria and to support Victorians involved in the diving industry.	In the event of a hydrocarbon spill, members' business may be commercially affected.	2	Existing database
546	Dockside Waterfront Indulgence	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
548	Drift House, Small Luxury Hotel and Dining Room	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
549	Edge 17	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
518	Eight Spence	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
519	Elm Tree Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
520	Fairholme Apartments	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
611	Fin Chaser Fishing Charters - Portland	25(1)(d)	Business, industry and research	Fisheries business	Local fishing charter	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Project web search
550	Gardens Caravan Park Port Fairy	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
178	Go Surf School	25(1)(d)	Business, industry and research	Coastal business	Surf and Stand-Up Paddleboard lessons in Port Fairy, Warrnambool, and Cape Bridgewater	In the event of a hydrocarbon spill, members' business may be commercially affected.	2	Existing database
600	Golden Chain Victoria Lodge Motor Inn	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
607	Gone Fishing Charters - Portland	25(1)(d)	Business, industry and research	Fisheries business	Local fishing charter	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Project web search
185	Great Ocean Road Coast and Parks Authority	25(1)(d)	Business, industry and research	Tourism	Established on 1 December 2020 to deliver better protection and management of the iconic coast and parks of Victoria's Great Ocean Road. Also	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
					manages a national park, three local ports and numerous caravan parks and camping sites.	result in temporary access issues and loss of visual amenity.		
186	Great Ocean Road Regional Tourism	25(1)(d)	Business, industry and research	Tourism	Regional tourism board covering the area from Torquay to the South Australian border. Working with local municipalities, tourism associations and tourism related operators to make the Great Ocean Road Region the destination of choice and help the region prosper.	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Existing database
187	Great Ocean Road Tourist Park	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Existing database
536	Harmony at Tower Hill	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
552	Hearn's Beachside Villas	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
534	High View Family Cottages	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
521	Hotel Warrnambool	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
196	Institute for Marine and Antarctic Studies (IMAS) - University of Tasmania	25(1)(d)	Business, industry and research	University research	A collaborative research body in marine and Antarctic science between the University of Tasmania, CSIRO Marine and Atmospheric Research, the Australian Antarctic Division and other agencies. Research interests in various environment values and sensitivities and support for further research programs with common interests.	Researchers may deploy equipment in the marine environment that could be affected by operations or emergency events. The activity may also need to be considered when analysing collected scientific data.	2	Existing database
522	Kiki Holiday Apartments	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
609	Kraken Fishing Charters	25(1)(d)	Business, industry and research	Fisheries business	Local fishing charter	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Project web search
553	Laneway Apartments	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
445	Lochard Motor Inn	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
523	Mahogany Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
494	Mako Ocean Adventures	25(1)(d)	Business, industry and research	Tourism	Ocean tours Great Ocean Road	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Other operator Otway EP
598	Mariner Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
610	Matthew Hunt Fishing Services	25(1)(d)	Business, industry and research	Fisheries business	Local fishing charter	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
						For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.		
605	Melaleuca Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
502	Mickey Bourke's Koroit Hotel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
524	Mid City Motel Warrnambool	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
504	Mt Noorat Hotel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
495	Mulloka Cruises	25(1)(d)	Business, industry and research	Tourism	Boat cruises from Port Fairy	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Other operator Otway EP
615	Nelson Hotel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
554	Nivani Port Fairy Colonial Cottages	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
599	NRMA Portland Bay Holiday Park	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
525	NRMA Warrnambool Riverside Holiday Park	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
555	Ocean Ridge Retreat	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
556	Old Market Inn Port Fairy	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
506	Peterborough House	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
447	Pitcher Vista	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
592	Portland Bay Lodge	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
595	Portland Retro Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
597	Portland Tourist Park	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
558	Port Fairy Holiday Park	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
493	Pro Red Fishing Charters	25(1)(d)	Business, industry and research	Tourism	Regional fishing and boat charters	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Other operator Otway EP

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
608	Proline Fishing Charters	25(1)(d)	Business, industry and research	Fisheries business	Local fishing charter	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Project web search
603	Quest Portland	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
602	Richmond Henty Hotel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
448	Ride with Us	25(1)(d)	Business, industry and research	Tourism	Local transport provider and bike hire	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
472	Salty Dog Charters	25(1)(d)	Business, industry and research	Tourism	Local fishing charter	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Other operator Otway EP
507	Schomberg Inn	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
323	Sea Foam Villas Port Campbell	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
559	Seacombe House	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
441	Seahorse Coastal Villas	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
596	Seascape Accommodation	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
473	Sharkmen Charters	25(1)(d)	Business, industry and research	Tourism	Regional fishing and boat charters	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Other operator Otway EP
496	Skydive 12 Apostles	25(1)(d)	Business, industry and research	Tourism	Skydiving over 12 Apostles from Great Ocean Road airport	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Other operator Otway EP
442	Southern Ocean Motor Inn	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
570	Subco	25(1)(d)	Business, industry and research	Subsea infrastructure	Submarine cable operator	Potential impact to subsea cables	2	Existing database
346	Superloop	25(1)(d)	Business, industry and research	Subsea infrastructure	Superloop has gained membership of the INDIGO Consortium with its acquisition of SubPartners. A subsea communications provider and member of the Indigo consortium	Potential impact to subsea cables	2	Existing database
535	The Bank	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
560	The Boatshed Waterfront B&B	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
503	The Cally	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
561	The Coach House	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
562	The Oak & Anchor Hotel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
443	The Port O Call	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
563	The Star of The West Hotel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
564	The Victoria Apartments	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
377	Timboon Action Group	25(1)(d)	Business, industry and research	Commercial group	Local volunteer community group committed to the promotion and development of the community.	In the event of a hydrocarbon spill, local businesses may be commercially affected.	2	Existing database
526	Turn-In Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
383	Twelve Apostles Tourism & Business Group	25(1)(d)	Business, industry and research	Tourism	Membership-based organisation that provides leadership for the development and facilitation of local tourism and business initiatives.	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Existing database
397	Victorian Tourism Industry Council (VTIC)	25(1)(d)	Business, industry and research	Tourism	Peak tourism industry body and is the leading advocate for Victoria's tourism and events industry. Represents over 1,000 businesses, providing opportunities for members to connect and keep informed on the latest research, policy development and impacts that shape the Victorian visitor economy.	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Existing database
568	Vocus	25(1)(d)	Business, industry and research	Subsea infrastructure	Submarine cable operator with future plans for new cables	Potential impact to subsea cables	2	Other stakeholder
538	Warreen Killarney BNB	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
527	Warrnambool Central Court Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
528	Warrnambool Diving & Firearms	25(1)(d)	Business, industry and research	Coastal business	Accommodation provider	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
529	Warrnambool Gallery Apartments	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
530	Warrnambool Holiday Village	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
531	Warrnambool Motel and Holiday Park	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
532	Warrnambool Retreat	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
492	Warrnambool Tours	25(1)(d)	Business, industry and research	Tourism	Specialise in small group luxury tours	In the event of a hydrocarbon spill, tourism business may be commercially affected. For offshore tourism operators, offshore activities result in temporary access issues and loss of visual amenity.	2	Other operator Otway EP
444	Waves Luxury Suites	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
533	Waves Motel and Apartments	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
594	Whalers Rest Motor Inn	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
612	William Dutton Motel	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
565	Wyntonia Beachfront Accommodation	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
566	Yambuk Lake Caravan Park	25(1)(d)	Business, industry and research	Tourism	Local accommodation provider.	In the event of a hydrocarbon spill, tourism business may be commercially affected.	2	Project web search
590	Yumbah Aquaculture - Narrawong	25(1)(d)	Business, industry and research	Aquaculture	Aquaculture developer / operator	In the event of a hydrocarbon spill, water quality may affect stock	2	Project web search
First Nations 25(1)(d)								
65	Bunurong Land Council Aboriginal Corporation	25(1)(d)	First Nations	Native Title Holder	The Bunurong Land Council Aboriginal Corporation manages native title rights for the Bunurong Peoples. BLCAC is a Registered Aboriginal Party (RAP). The Victorian Aboriginal Heritage Act 2006 recognises Registered Aboriginal Parties (RAP) as the primary guardians, keepers and knowledge holders of Aboriginal Cultural Heritage. RAPs are the primary source of advice and knowledge on matters relating to Aboriginal places or Aboriginal objects in their region. (https://www.aboriginalheritagecouncil.vic.gov.au/about-victorias-registered-aboriginal-parties). As such, RAPs are well placed to advise on potential risks and impacts of our activities and to advise on the existence of potential additional Relevant Persons whose functions, interests or activities may be impacted by our activities.	In the unlikely event of a hydrocarbon spill, cultural heritage may be affected.	1	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
140	Eastern Maar Aboriginal Corporation (EMAC)	25(1)(d)	First Nations	Native Title Holder	The Eastern Maar Aboriginal Corporation manages native title rights for the Eastern Maar Peoples. The EMAC is a Registered Aboriginal Party (RAP). The Victorian Aboriginal Heritage Act 2006 recognises Registered Aboriginal Parties (RAP) as the primary guardians, keepers and knowledge holders of Aboriginal Cultural Heritage. RAPs are the primary source of advice and knowledge on matters relating to Aboriginal places or Aboriginal objects in their region. (https://www.aboriginalheritagecouncil.vic.gov.au/about-victorias-registered-aboriginal-parties). As such, RAPs are well placed to advise on potential risks and impacts of our activities and to advise on the existence of potential additional Relevant Persons whose functions, interests or activities may be impacted by our activities.	Planned offshore activities, and the unlikely event of a hydrocarbon spill, may affect cultural heritage.	1	Existing database
191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	25(1)(d)	First Nations	Native Title Holder	The Gunaikurnai Land and Waters Aboriginal Corporation manages native title rights for the Gunaikurnai Peoples. GLaWAC is a Registered Aboriginal Party (RAP). The Victorian Aboriginal Heritage Act 2006 recognises Registered Aboriginal Parties (RAP) as the primary guardians, keepers and knowledge holders of Aboriginal Cultural Heritage. RAPs are the primary source of advice and knowledge on matters relating to Aboriginal places or Aboriginal objects in their region. (https://www.aboriginalheritagecouncil.vic.gov.au/about-victorias-registered-aboriginal-parties). As such, RAPs are well placed to advise on potential risks and impacts of our activities and to advise on the existence of potential additional Relevant Persons whose functions, interests or activities may be impacted by our activities.	In the unlikely event of a hydrocarbon spill, cultural heritage may be affected.	1	Existing database
192	Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC)	25(1)(d)	First Nations	Native Title Holder	GMTOAC manages native title rights for the Gunditjmara community and ensure cultural obligations and responsibilities for country, custom and beliefs are upheld. GMTOAC is a Registered Aboriginal Party (RAP). The Victorian Aboriginal Heritage Act 2006 recognises Registered Aboriginal Parties (RAP) as the primary guardians, keepers and knowledge holders of Aboriginal Cultural Heritage. RAPs are the primary source of advice and knowledge on matters relating to Aboriginal places or Aboriginal objects in their region. (https://www.aboriginalheritagecouncil.vic.gov.au/about-victorias-registered-aboriginal-parties). As such, RAPs are well placed to advise on potential risks and impacts of our activities and to advise on the existence of potential additional Relevant	Planned offshore activities, and the unlikely event of a hydrocarbon spill, may affect cultural heritage.	1	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
					Persons whose functions, interests or activities may be impacted by our activities.			
588	Southern Oceans Protection Embassy Collective (SOPEC)	25(1)(d)	First Nations	Interest group	Gunditjmara led organisation fighting to protect sea country and kin, Koontapool, from the expansion of offshore oil and gas in the Otway basin (Instagram 10 Feb 2024)	Planned offshore activities, and the unlikely event of a hydrocarbon spill, may affect cultural heritage.	2 (Telephone number not published)	Other operator Otway EP
398	Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC)	25(1)(d)	First Nations	Native Title Holder	Community organisation that represents the interests of Aboriginal people residing in South-western Victoria. The WTOAC is a Registered Aboriginal Party (RAP). The Victorian Aboriginal Heritage Act 2006 recognises Registered Aboriginal Parties (RAP) as the primary guardians, keepers and knowledge holders of Aboriginal Cultural Heritage. RAPs are the primary source of advice and knowledge on matters relating to Aboriginal places or Aboriginal objects in their region. (https://www.aboriginalheritagecouncil.vic.gov.au/about-victorias-registered-aboriginal-parties). As such, RAPs are well placed to advise on potential risks and impacts of our activities and to advise on the existence of potential additional Relevant Persons whose functions, interests or activities may be impacted by our activities. Prefers not to be consulted on this type of activity, so correspondence provided for information purposes and for potential sharing with members.	Planned offshore activities, and the unlikely event of a hydrocarbon spill, may affect cultural heritage.	2-does not require consultation	Existing database
Fishery licence holder or representative body 25(1)(d)								

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
670	A B Hunter Fishing Nominees Pty Ltd	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
7	Abalone Council Victoria	25(1)(d)	Fishery licence holder or rep	Peak body	The peak body representing interests of abalone divers, quota holders and processors in the Victorian wild harvest abalone fishery. Is a member of SIV, and will also be contacted by SIV with respect to consultation on this project.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
8	Abalone Victoria (Central Zone) Ltd (AVCZ)	25(1)(d)	Fishery licence holder or rep	Victoria-Abalone Central Zone	AVCZ represent the interests of Abalone Central Zone entitlement holders on operational fishery management matters. For Abalone, Abalone Council Victoria are members of SIV, while individual licence holders are members of ACV. As such AVZ members will also be contacted indirectly from SIV.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
17	Apollo Bay Fishermen's Cooperative	25(1)(d)	Fishery licence holder or rep	Co-op-multiple fisheries	Distributes crayfish and rock lobster across Australia and globally, runs fish and chip shop operation and supports wider local fishing industry in the Otway region. ABFC are members of SIV, as are their Victorian fisheries licence holders.	Fishers may be affected during operations due to access restrictions, and in the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
37	Australian Southern Bluefin Tuna Industry Association (ASBTIA)	25(1)(d)	Fishery licence holder or rep	Comm-Southern Bluefin Tuna	Represents the Australian Southern Bluefin Tuna Industry. Members (representing 90% of Australian quota) are based in Port Lincoln (SA).	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	1	Existing database
38	Australian Wildcatch Fishing	25(1)(d)	Fishery licence holder or rep	Comm-Southern & Eastern Scalefish & Shark	SESS Fisher operate in Commonwealth waters.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
82	Commonwealth Fisheries Association (CFA)	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Peak industry body representing the interests of fishers operating in Commonwealth managed fisheries. AFMA recommended that engagement with CFA be undertaken as the peak fishing industry body for Commonwealth fisheries.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
574	Cull Fisheries Management/Cull Fisheries Pty Ltd	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Squid jig fisher operating in Commonwealth waters.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Other operator
437	Fishermen Direct Pty Ltd	25(1)(d)	Fishery licence holder or rep	Victoria Corner Inlet fishery	Hold a number of different fishing licences, operates in Gippsland area, but during previous consultation on another project, an interest was expressed to be consulted on future drilling activities in the Otway Basin.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
283	Port Campbell Professional Fishermen's Association	25(1)(d)	Fishery licence holder or rep	Co-op-multiple fisheries	Industry body representing views and interests of its members. EMBA may overlap with State fisheries who may be members of the association. Port Campbell is in Otway	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
688	Raptis Fishing Licences Pty Ltd	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
671	Relevant Person ID 671	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
672	Relevant Person ID 672	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
673	Relevant Person ID 673	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
674	Relevant Person ID 674	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
675	Relevant Person ID 675	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
676	Relevant Person ID 676	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
	Relevant Person ID 677	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
678	Relevant Person ID 678	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
679	Relevant Person ID 679	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
680	Relevant Person ID 680	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
681	Relevant Person ID 681	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
682	Relevant Person ID 682	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
683	Relevant Person ID 683	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
684	Relevant Person ID 684	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
685	Relevant Person ID 685	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
686	Relevant Person ID 686	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
687	Relevant Person ID 687	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
689	Relevant Person ID 689	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
690	Relevant Person ID 690	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
691	Relevant Person ID 691	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
693	Relevant Person ID 693	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
694	Relevant Person ID 694	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
695	Relevant Person ID 695	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
696	Relevant Person ID 696	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
697	Relevant Person ID 697	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
698	Relevant Person ID 698	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
699	Relevant Person ID 699	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
700	Relevant Person ID 700	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
701	Relevant Person ID 701	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
702	Relevant Person ID 702	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
703	Relevant Person ID 703	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
704	Relevant Person ID 704	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
706	Relevant Person ID 706	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
707	Relevant Person ID 707	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
708	Relevant Person ID 708	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
709	Relevant Person ID 709	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
710	Relevant Person ID 710	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
711	Relevant Person ID 711	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
712	Relevant Person ID 712	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
713	Relevant Person ID 713	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
	Relevant Person ID 714	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
	Relevant Person ID 715	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
	Relevant Person ID 717	25(1)(d)	Fishery licence holder or rep	Comm-Bass Strait Central Zone Scallop	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
317	Scallop Fishermen's Association Inc.	25(1)(d)	Fishery licence holder or rep	Victoria-Scallop	Scallop Fishermen's Association Inc represents the interests of scallop fishermen operating within Australia's south east waters. Our members hold entitlement to operate within the Bass Strait Central Zone Scallop Fishery, the Victorian Scallop Fishery and the Tasmanian Scallop Fishery.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
318	Scallop Fishermen's Association of Tasmania	25(1)(d)	Fishery licence holder or rep	Peak body	Industry association for the Bass Strait Central Scallop Fishery (Commonwealth Fishery)	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
327	Seafood Industry Victoria (SIV)	25(1)(d)	Fishery licence holder or rep	Peak body	Peak industry body representing the interests of fishers operating in State (Vic) managed fisheries. SIV primary contact for State fishers. Multiple constructive engagements over the years with SIV to discuss Cooper Energy's activities and ongoing engagement. SIV has expressed interest in overlapping activities with its members. SIV engagement covers all state fisheries; every Victorian fishing access licence holder other than individual wildcatch abalone licence holders are members, with wildcatch abalone fishery licence holders represented through their membership with Abalone Council Victoria. ACV are members of SIV. Cooper Energy has established a formal agreement with SIV that supports consultation with all relevant SIV members.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	1	Existing database
692	Ship Agencies Australia Pty Ltd	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Commonwealth fisheries licence holder.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	AFMA
338	South East Trawl Fishing Industry Association (SETFIA)	25(1)(d)	Fishery licence holder or rep	Peak body	Peak industry body representing the interests of fishers operating in the Commonwealth Trawl Sector. SETFIA supports consultation for members of the following fisheries: South East Trawl (Cth), Gillnet Hook and Trap (Cth), Eastern Zone Rock Lobster (Vic), Bass Strait Central zone scallop fishery (Cth), and Small Pelagic Fishery (Cth) and represents SPFIA and SSIA in addition to SETFIA members. Cooper Energy has had a long-standing agreement in place with SETFIA to support Coper Energy's consultation.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	1	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
184	Southern Ocean Mariculture	25(1)(d)	Fishery licence holder or rep	Aquaculture	An abalone farm pioneer operating near Port fairy.	In the event of a hydrocarbon spill, water quality may affect stock	2	Project web search
341	Southern Rock Lobster Limited	25(1)(d)	Fishery licence holder or rep	Peak body	Administers an industry wide levy that funds research, development, and innovation in Australia's Southern rock lobster fishery, underpinning the sustainable harvest of lobsters from the Southern Ocean. SIV are members of SRL, and lobster fishers operating in the Victorian fishery are members of SIV.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
342	Southern Shark Industry Alliance (SSIA)	25(1)(d)	Fishery licence holder or rep	Comm-Southern & Eastern Scalefish & Shark	Industry body representing interests of its Commonwealth-licenced shark gillnet and shark hook members in the Gillnet Hook and Trap Fishery. Activity is within the Southern and Eastern Scalefish and Shark Fishery management area. SSIA also represented by SETFIA.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
575	Trinsand Fisheries Pty Ltd	25(1)(d)	Fishery licence holder or rep	Comm-Southern Squid Jig	Squid jig fisher operating in Commonwealth waters.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Project web search
382	Tuna Australia	25(1)(d)	Fishery licence holder or rep	Peak body	Peak body representing statutory fishing right owners, holders, fish processors and sellers, and associate members of the Eastern and Western tuna and billfish fisheries of Australia. Cooper Energy has a consultation services agreement with Tuna Australia.	Fishers may be affected during operations due to access restrictions or other aspects. In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	1	Existing database
411	Western Abalone Divers Association	25(1)(d)	Fishery licence holder or rep	Peak body	The Western Abalone Divers Association (WADA) represents licence holders and divers in the abalone industry in South West Victoria. For Abalone, Abalone Council Victoria are members of SIV, while individual licence holders are members of ACV. As such WADA members will also be contacted indirectly from SIV.	In the unlikely event of a hydrocarbon spill, fishing and marketability of catch may be affected.	2	Existing database
Interest groups 25(1)(d)								
3	3280-3284 Warrnambool Beach Patrol	25(1)(d)	Interest group	Environment-Local conservation	Volunteer organisation based in Warrnambool focussed on maintaining the quality of Warrnambool's beaches	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
18	Apollo Bay Landcare	25(1)(d)	Interest group	Environment-Local conservation	The Apollo Bay Landcare Group remains a key force in local Landcare with many members having made significant contributions to environmental rehabilitation on their properties. Whilst continuing a concern for weed and pest management, the group also has a strong focus on local environmental issues such as monitoring the nests of the endangered Hooded Plover.	Activities may impact local fauna of interest. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
20	Apollo Bay Sailing Club	25(1)(d)	Interest group	Recreation-Other	Members based recreational sailing club based in Apollo Bay.	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
22	Apollo Bay Surf Lifesaving Club	25(1)(d)	Interest group	Recreation-Surf Life Saving Club	Community club undertaking beach patrols, surf sport, events and community social functions	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
463	AusOcean	25(1)(d)	Interest group	Environmental-Conservation	Develop and apply open source, ocean technology to help solve ocean science and conservation challenges. Aim to transform the way in which ocean data is collected and communicated on a global scale.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected. Activities may affect data gathering activities.	2	Other operator Otway EP
28	Australian Coastal Society – Victorian Chapter	25(1)(d)	Interest group	Environment-Local conservation	Contributes to a number of coastal and marine policy reforms happening in Victoria via working groups and submissions.	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
30	Australian Conservation Foundation	25(1)(d)	Interest group	Environmental-Conservation	A community-funded organisation that advocates for nature protection and climate action in Australia.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
32	Australian Marine Conservation Society	25(1)(d)	Interest group	Environmental-Conservation	AMCS is a national charity that campaigns for healthy and free oceans and coasts.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
669	Citizen Scientists Southern Right Whales	25(1)(d)	Interest group	Environmental-Conservation	The SRW citizen scientists have a particular interest in sighting, photographing and identifying Southern Right Whales in the Otway region, and upload this data into the online Whaleface site.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
147	Environment Victoria	25(1)(d)	Interest group	Environmental-Conservation	Victoria based charity campaigning to solve the climate crisis and build a thriving, sustainable society that protects and values nature. Key focus is climate change and Victorian wildlife.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
153	Fight for the Bight Port Fairy	25(1)(d)	Interest group	Environmental-Conservation	Goal is to protect the Great Australian Bight from exploitation by Big Oil.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
166	Friends of Bay of Islands Coastal Park	25(1)(d)	Interest group	Environment-Local conservation	A community group preserving native vegetation, revegetating, and removal of exotic invasive species.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
167	Friends of the Earth - Melbourne	25(1)(d)	Interest group	Environmental-Conservation	Campaigning organisation with climate justice perspective. Focus is to protect forests and waterways, stand as allies for First Nations' self-determination and land rights and keep fossil fuels in the ground.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
467	Game Fishing Association of Victoria	25(1)(d)	Interest group	Peak body	Member of Game Fishing Association of Australia, which is affiliated with the International Game Fish Association (IGFA) and plays an active part in the	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Other operator Otway EP

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
					leadership of the sport of game fishing on a world level.			
189	Greenpeace	25(1)(d)	Interest group	Environmental-Conservation	Independent campaigning organization that uses peaceful protest and creative confrontation to expose global environmental problems and promote solutions that are essential to a green and peaceful future.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
197	International Fund for Animal Welfare (IFAW)	25(1)(d)	Interest group	Environmental-Conservation	Global non-profit helping animals and people thrive together. Run various programmes including marine mammal rescue and research, and marine conservation	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
220	Life Saving Victoria	25(1)(d)	Interest group	Recreation-Surf Life Saving Club	Independent organisation that works with communities, educational institutions, governments, businesses and the broader aquatic industry to achieve new lifesaving and water safety initiatives	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
227	Marine Mammal Foundation	25(1)(d)	Interest group	Environmental-Conservation	Protects the marine environment for marine mammals through research, community engagement, and education.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
586	No Offshore Windfarm Zone - Warrnambool and District	25(1)(d)	Interest group	Environmental-Conservation	General concerns around offshore windfarms and effects on marine life.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Self-identified during community sessions
262	Ocean Racing Club of Victoria	25(1)(d)	Interest group	Recreation-Other	Club which conducts regular offshore racing in Victoria. Home of blue water classic Melbourne to Hobart and Rudder Cup yacht races (noting route goes along west coast of Tasmania)	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
263	Ocean Watch	25(1)(d)	Interest group	Fisheries advocacy/sustainability/research	Not-for-profit environmental company that works to advance sustainability in the Australian seafood industry and operates community-based coastal habitat restoration programs.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
266	Otway Climate Emergency Action Network (OCEAN)	25(1)(d)	Interest group	Environmental-Conservation	OCEAN is an environmental activist and campaign group based in Apollo Bay and the Otway ranges. We support non-violent civil disobedience to demand urgent action to halt the climate and ecological crisis.	Activities may contribute to global emissions.	2	Existing database
271	Paddle Victoria	25(1)(d)	Interest group	Recreation-Other	Members organisation to support the paddling community	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
273	Peterborough Golf Club	25(1)(d)	Interest group	Recreation-Other	Local golfing club.	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be impacted, affecting local amenity.	2	Existing database
281	Port Campbell Community Group	25(1)(d)	Interest group	Local community	Volunteer group focussed on environment protection of local fauna	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
285	Port Campbell Rifle Club	25(1)(d)	Interest group	Recreation-Other	Rifle club for local members and tourists.	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be impacted, affecting local amenity.	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
286	Port Campbell Surf Life Saving Club	25(1)(d)	Interest group	Recreation-Surf Life Saving Club	Community club undertaking beach patrols, surf sport, events and community social functions	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
470	Port Fairy Angling Club	25(1)(d)	Interest group	Recreation-Fishing	Local angling club	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Other operator Otway EP
289	Port Fairy Yacht Club	25(1)(d)	Interest group	Recreation-Other	Port Fairy based yacht club offering sailing and social events.	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
718	Protect the West	25(1)(d)	Interest group	Environmental-Conservation	Protect the West is primarily focussed on environmental issues that may impact upon areas in western Victoria.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
576	Relevant Person ID 576	25(1)(d)	Interest group	Individual-local community	Individual with an interest in having a choice in energy consumption.	Self-identified with an interest in well managed ongoing gas exploration.	2	Self-identify
322	Scuba Divers Federation of Victoria	25(1)(d)	Interest group	Recreation-Other	Amateur organisation representing diving clubs throughout Victoria.	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
325	Sea Shepherd	25(1)(d)	Interest group	Environmental-Conservation	Sea Shepherd fights to defend, conserve and protect our ocean. They use direct action to defend marine wildlife and protect their habitat in the world's oceans.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
352	Surfers for Climate	25(1)(d)	Interest group	Environmental-Conservation	A sea-roots movement dedicated to positive climate action and heads the campaign 'Don't Drill the Otways'.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
354	Surfrider Foundation Australia	25(1)(d)	Interest group	Environmental-Conservation	Not-for-profit dedicated to the protection of Australia's waves and beaches through conservation, activism, research and education.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
389	Victoria Game Fishing Club	25(1)(d)	Interest group	Recreation-Fishing	The premier game fishing club in the southern states of Australia	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
394	Victorian Recreational Fishing Peak Body (VRFish)	25(1)(d)	Interest group	Recreation-Fishing	Peak body representing recreational fishing interests in Victorian waters.	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
402	Warrnambool Coastcare Landcare Network	25(1)(d)	Interest group	Environment-Local conservation	Improve biodiversity in Warrnambool and district and advocate for the protection of our natural environment	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
469	Warrnambool Offshore & Light GFC	25(1)(d)	Interest group	Recreation-Fishing	Local game fishing club	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Project web search
404	Warrnambool Surf Life Saving Club	25(1)(d)	Interest group	Recreation-Surf Life Saving Club	Community club undertaking beach patrols, surf sport, events and community social functions	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database

ID	Relevant person	Relevant persons category	Primary group	Sub-group	General description	Why relevant persons for ASP	Level of effort	How found
407	Warrnambool Yacht Club	25(1)(d)	Interest group	Recreation-Other	Warrnambool based family-oriented yacht club offering sailing and social events.	Activities may result in short term loss of access to operational areas, or impact visual amenity. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
412	Whale and Dolphin Conservation Australia	25(1)(d)	Interest group	Environmental-Conservation	Leading charity dedicated to the protection of whales and dolphins	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
413	Wilderness Society Melbourne	25(1)(d)	Interest group	Environmental-Conservation	A community-based, not-for-profit non-governmental environmental advocacy organisation.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
418	Windsurfing Victoria	25(1)(d)	Interest group	Recreation-Other	Represents the community of windsurfers in Victoria and promotes all aspects of the sport locally. Windsurfing Victoria is the public voice promoting windsurfing and lobbying to protect access to preferred spots around the State.	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
423	World Wildlife Fund	25(1)(d)	Interest group	Environmental-Conservation	WWF partners with governments, businesses, communities, and individuals to catalyse change for a range of pressing environmental issues.	Activities may impact local fauna and flora. In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
425	Wye River Surf Life Saving Club	25(1)(d)	Interest group	Recreation-Surf Life Saving Club	Community club undertaking beach patrols, surf sport, events and community social functions	In the unlikely event of a hydrocarbon spill, marine and coastal areas may be affected.	2	Existing database
Local government and elected officials 25(1)(d)								
79	Colac Otway Shire	25(1)(d)	Local government and elected officials	Local Govt	Victorian local government authority.	Local government authority that overlaps the Consultation Focus Area. Residents and ratepayers may be affected by the activities.	2	Existing database
86	Corangamite Shire Council	25(1)(d)	Local government and elected officials	Local Govt	Victorian local government authority.	Local government authority that overlaps the Consultation Focus Area. Residents and ratepayers may be affected by the activities.	2	Existing database
177	Glenelg Shire Council	25(1)(d)	Local government and elected officials	Local Govt	Victorian local government authority.	Local government authority that overlaps the Consultation Focus Area. Residents and ratepayers may be affected by the activities.	2	Existing database
243	Moyne Shire Council	25(1)(d)	Local government and elected officials	Local Govt	Victorian local government authority.	Local government authority that overlaps the Consultation Focus Area. Residents and ratepayers may be affected by the activities.	2	Existing database
401	Warrnambool City Council	25(1)(d)	Local government and elected officials	Local Govt	Victorian local government authority.	Local government authority that overlaps the Consultation Focus Area. Residents and ratepayers may be affected by the activities.	2	Existing database

3.0 Identification of Relevant Persons – 25(1)(e)

No persons were identified under regulation 25(1)(e) of the OPGGS(E)R as all persons identified as relevant persons have qualities consistent with 25(1)(a), (b) or (d).

4.0 Identification of other stakeholders

Table 4-1 Other stakeholders

ID	Stakeholder	Category	Primary group	Sub group	General description
52	Bev McArthur MP, Member for Western Victoria Region	Other stakeholder	Local government and elected officials	State MP	Victorian MP - Member for Western Victoria Region. Not considered a Relevant person as an organisation itself, but may assist in identifying relevant persons. Information also provided for awareness.
90	Dan Tehan MP, Federal Member for Wannon	Other stakeholder	Local government and elected officials	Commonwealth MP	Federal MP - Member for Wannon. Not considered a Relevant person as an organisation itself, but may assist in identifying relevant persons. Information also provided for awareness.
151	Federation of Victorian Traditional Owner Corporations	Other stakeholder	First Nations	Peak body	Peak body for Victorian Traditional Owner corporations. Not considered a Relevant person as an organisation itself, but may assist in identifying relevant persons.
155	First Nations Legal & Research Services (Vic)	Other stakeholder	First Nations	Other organisation	First Nations Legal & Research Services is the native title services provider for Victorian Traditional Owners. It separated from FVTOC and was renamed from Native Title Services Vic Ltd. Govt funded, independent org. Not considered a Relevant person as an organisation itself, but may assist in identifying relevant persons.
193	Gunditjmara Aboriginal Cooperative Ltd	Other stakeholder	First Nations	Other organisation	The Cooperative was incorporated in 1982 and now delivers a wide range of culturally appropriate health and well-being services at all life stages from cradle to grave. The Cooperative has more than 300 members and more than 60 staff members. Many members likely represented by EMAC and/or GMTOAC. Not considered a Relevant person as an organisation itself, but may assist in identifying relevant persons.
571	Jacinta Ermacora MP - Member for Western Victoria	Other stakeholder	Local government and elected officials	State MP	Victorian MP - Member for Western Victoria Region. Not considered a Relevant person as an organisation itself, but may assist in identifying relevant persons. Information also provided for awareness.

ID	Stakeholder	Category	Primary group	Sub group	General description
202	Joe McCracken MP- Member for Western Victoria Region	Other stakeholder	Local government and elected officials	State MP	Victorian MP - Member for Western Victoria Region, Not considered a Relevant person as an organisation itself, but may assist in identifying relevant persons. Information also provided for awareness.
310	Richard Riordan MP-Member for Polwarth	Other stakeholder	Local government and elected officials	State MP	Victorian MP - Member for Polwarth. Not considered a Relevant person as an organisation itself, but may assist in identifying relevant persons. Information also provided for awareness.
233	Roma Britnell MP - Member for South West Coast	Other stakeholder	Local government and elected officials	State MP	Victorian MP - Member for South West Coast. Not considered a Relevant person as an organisation itself, but may assist in identifying relevant persons. Information also provided for awareness.
414	Winda Mara Aboriginal Corporation	Other stakeholder	First Nations	Other organisation	The corporation was established in 1991, providing community support services for First Nations people in the area. Not considered a relevant person as an organisation but may help in identifying relevant persons amongst its community. Many members likely represented by EMAC and/or GMTOAC.

5.0 Summary of consultation

This consultation report summarises the consultation activities undertaken by Amplitude Energy with each relevant person, for this EP.

This report further reflects that:

1. Amplitude Energy has discharged its obligations for consultation under regulation 25, by providing all relevant persons listed in Table 1-1 and Table 2-1 with:
   - sufficient information to make an informed assessment of the possible consequences of the activity on their functions, interests or activities; a reasonable period for consultation; and
   - a reasonable opportunity to consult.

2. Amplitude Energy has assessed and responded to all claims and objection raised about the adverse impacts of each activity to which this EP relates, by the relevant persons in Table 1-1 and Table 2-1.

Table 5-1 and Table 5-2 provide further summaries of how Amplitude Energy has discharged its consultation obligations with respect to the relevant persons listed in Table 1-1 and Table 2-1.

Table 4-1 identifies other stakeholders that Cooper Energy contacted about this EP, but not for the purposes of consultation under regulation 25.

Table 5-1 Relevant persons consultation report

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Commonwealth or State agency or authority 25(1)(a)								
2025 0513 145452 3606	26	Australian Border Force (ABF) (Maritime Border Command-MBC))	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0809 154349 2782	26	Australian Border Force (ABF) (Maritime Border Command-MBC))	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 152109 3717	29	Australian Communications and Media Authority (ACMA)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted earlier advice on an EP in the same area your recommendation to consult the following, and we will endeavour to do so. **BW Digital - Hawaiki Nui cable** **SUBCO - SMAP cable** **Vocus and Google - Pacific Connect cable**. Noted that we will also consult with AHO. Also note that based on current mapping, there are no submarine cables in close proximity to our proposed activities area.	N/A	N/A
2025 0514 084431 5800	29	Australian Communications and Media Authority (ACMA)	2025-05-14	Email	In	Noted that the project area located in the Otway Basin, Victoria is not in the vicinity of any **submarine cables protection zones** declared by the ACMA. However, noted that the project area may be located in the vicinity of the Indigo Central submarine cable and provided relevant website links. Noted list of telecommunications submarine cable owners we provided that we were contacting, and confirmed we should consult with owners of cables in vicinity of the project area. No more consultation is required by ACMA on these projects.	No objection or claim of adverse impact. Reasonable request to consult with owners of submarine cables in vicinity of project area.	Consulted with listed submarine cable owners.
2025 0514 084531 6215	29	Australian Communications and Media Authority (ACMA)	2025-05-14	Email	Out	Passed on thanks for quick response.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received. ACMA advised no further consultation required.								
2025 0513 154951 7846	97	Australian Department of Agriculture, Fisheries and Forestry (DAFF) - Biosecurity (marine pests)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0519 142828 4923	97	Australian Department of Agriculture, Fisheries and Forestry (DAFF) - Biosecurity (marine pests)	2025-05-13	Email	In	Auto reply.	N/A	N/A
2025 0809 170346 4061	97	Australian Department of Agriculture, Fisheries and Forestry (DAFF) - Biosecurity (marine pests)	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
2025 0809 171105 8642	97	Australian Department of Agriculture, Fisheries and Forestry (DAFF) - Biosecurity (marine pests)	2025-08-09	Email	In	Auto reply	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 155045 8330	98	Australian Department of Agriculture, Fisheries and Forestry (DAFF) - Fisheries	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0809 170602 4883	98	Australian Department of Agriculture, Fisheries and Forestry (DAFF) - Fisheries	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0513 155144 7381	101	Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Sea Dumping Section	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0519 142802 3036	101	Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Sea Dumping Section	2025-05-13	Email	In	Auto reply	N/A	N/A
2025 0809 170749 5881	101	Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Sea Dumping Section	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
2025 0809 170821 5095	101	Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Sea Dumping Section	2025-08-09	Email	In	Auto reply.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0514 142547 2065	102	Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Underwater Cultural Heritage	2025-05-14	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted and will take into account the advice provided by DCCEEW UCH during recent consultation on the Athena Supply Project EP when developing these EPs (email 16 October 2024).	N/A	Consistent with ASP EP. No new measures adopted.
2025 0514 145800 6333	102	Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Underwater Cultural Heritage	2025-05-14	Email	In	Auto reply	N/A	N/A
2025 0809 171029 3181	102	Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Underwater Cultural Heritage	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 14 May 2025 and no request for additional time has been received.								
2025 0513 160059 1408	105	Australian Department of Defence (DOD)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0809 171234 5335	105	Australian Department of Defence (DOD)	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 154255 7972	31	Australian Fisheries Management Authority (AFMA)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0527 085206 5365	31	Australian Fisheries Management Authority (AFMA)	2025-05-27	Email	Out	Passed on thanks for email regarding the 2 ECSP EPs, and acknowledged we intended to consult with SETFIA, SSIA, Tuna Australia, ASBTIA and CFA. Noted proposed activities were close to the Cth Bass Strait Scallop Fishery, and encouraged Amplitude Energy to consult with them via the following bodies: Bass Strait Scallop Industry Association Tasmanian Seafood Industry Council Seafood Industry Victoria Advised of AFMA's new email address for future correspondence: **OffshoreEnergy@afma.gov.au**.	No objection or claim of adverse impact. Reasonable request as to which fisheries bodies to consult. Reasonable request to update contact details.	Consulted with fisheries as described in Event ID 2025 0529 113719 7151, noting that we would go direct to individual licence holders of the Cth Bass Strait Central Zone Scallop Fishery, as the peak body appears to have ceased operations. AFMA email contact details updated in database.

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0529 113719 7151	31	Australian Fisheries Management Authority (AFMA)	2025-05-29	Email	Out	Passed on thanks for response, noting response is also reflected on AFMA"s website. Noted that we had contacted Bass Strait Central Zone Scallop Fishery members direct thanks to AFMA recently providing a list of Cth fisheries license holders. Suggested some updates to the advice provided, noting that the Bass Strait Scallop Industry Association was no longer functioning, and that with respect to Tasmanian members, the Scallop Fishermen's Association of Tasmania was probably a better option for Tasmanian based members of the Cth fishery.	N/A	N/A
2025 0603 153940 1740	31	Australian Fisheries Management Authority (AFMA)	2025-06-03	Email	Out	Passed on thanks for the response and updates which will assist in their planned review of the information on their website.	No objection or claim of adverse impact.	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 160350 4726	106	Australian Hydrographic Service (AHS) (sits under Australian Hydrographic Office (AHO) - (DoD)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0514 132913 5800	106	Australian Hydrographic Service (AHS) (sits under Australian Hydrographic Office (AHO) - (DoD)	2025-05-14	Email	In	Passed on thanks. Noted there were no concerns with proposed activities. Only require further updates once activities are due to begin. Provided link to AHO"s standard notification requirements.	No objection or claim of adverse impact. Reasonable request for notifications.	Confirmed we would follow the notification requirements as per Event ID 2025 0514 140050 3106. Annie-2 EP stakeholder notifications register updated accordingly.
2025 0514 140050 3106	106	Australian Hydrographic Service (AHS) (sits under Australian Hydrographic Office (AHO) - (DoD)	2025-05-14	Email	Out	Passed on thanks, and confirmed we will follow the reporting requirements.	N/A	N/A
2025 0522 131114 5679	106	Australian Hydrographic Service (AHS) (sits under Australian Hydrographic Office (AHO) - (DoD)	2025-05-22	Email	Out	Queried as to whether 3 working weeks' notice was sufficient notice ahead of activities commencing, noting NtMs are issued fortnightly.	N/A	N/A
2025 0522 132733 1225	106	Australian Hydrographic Service (AHS) (sits under Australian Hydrographic Office (AHO) - (DoD)	2025-05-22	Email	In	Confirmed 3 working weeks' notice is fine, and that they also typically check in with us a couple of days prior to publication to check things are on schedule.	No objection or claim of adverse impact. Confirmed 3 weeks' notice for requesting NtM is sufficient time.	Will request NtM with at least 3 weeks' notice.
2025 0522 132753 5302	106	Australian Hydrographic Service (AHS) (sits under Australian Hydrographic Office (AHO) - (DoD)	2025-05-22	Email	Out	Passed on thanks.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 154456 1126	33	Australian Maritime Safety Authority (AMSA)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0520 142220 7349	33	Australian Maritime Safety Authority (AMSA)	2025-05-20	Email	In	Passed on thanks for the information on the activities proposed under the two ECSP EPs. Noted future correspondence should include the **NavSafety@amsa.gov.au** address. Provided vessel plot and noted that heavy vessel traffic likely in the area. Requested that associated survey and support vessels notify JRCC through **rccaus@amsa.gov.au** to provide for radio-navigation warnings 24-48 hours prior to commencement of operations. The RC will require the vessel details (including name, callsign and Maritime Mobile Service Identity (MMSI)), satellite communications details (including	No objection or claim of adverse impact. Reasonable requests for notifications. Reasonable requests made to exhibit appropriate lighting and shapes, and to comply with COLREGs. Reasonable requests to evaluate and implement adequate anti-collision measures.	Section 6.2.1 updated to reflect heavy vessel traffic. Confirmed adherences to navigation and anti collison requirements. Annie-2 EP stakeholder notifications register updated accordingly.

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						INMARSAT-C and satellite telephone), area of operation, requested clearance from other vessels and need to be advised when operations start and end. AHO should be notified no less than 4 working weeks prior to commencement of operations for issuance of NtMs. Vessels should exhibit appropriate lights and shapes to reflect the nature of operations and comply with the International Rules for Preventing Collisions at Sea (**COLREGs**), in particular, the use of appropriate lights and shapes to reflect the nature of operations (e.g. restricted in the ability to manoeuvre). Vessels should also ensure their navigation status is set correctly in the ship's Automatic Identification System (AIS) unit. Amplitude Energy should evaluate and implement adequate anti-collision measures, including additional warnings and/or lights to attract attention, installation of AIS units, and offshore guard vessel/s. Provided links to AMSA"s spatial data gateway and showed how customised information could be requested.	Reasonable request to update contact details.	
2025 0522 131114 1245	33	Australian Maritime Safety Authority (AMSA)	2025-05-22	Email	Out	Passed on thanks for the quick response. Confirmed we will have the associated survey vessel/s and support craft notify AMSA's **Joint Rescue Coordination Centre** (JRRC) in the time and manner requested Will notify **Australian Hydrographic Office** (AHO) through **datacentre@hydro.gov.au**, no less than four working weeks before operations commence for the promulgation of related notices to mariners, or as otherwise advised by AHO. Noted and accepted the following advice: *Vessels should exhibit appropriate lights and shapes to reflect the nature of operations -we remind vessels of their obligation to comply with the International Rules for Preventing Collisions at Sea (**COLREGs**), in particular, the use of appropriate lights and shapes to reflect the nature of operations (e.g restricted in the ability to manoeuvre). Vessels should also ensure their navigation status is set correctly in the ship's Automatic Identification System (AIS) unit.* *Amplitude Energy should evaluate and implement adequate anti-collision measures. Whereby collision avoidance measures may include but are not limited to:* *Additional warnings and/or lights to attract attention.* *Installation of AIS units.* *Offshore guard vessel/s that can monitor traffic and take early action to alert a vessel approaching the area of operations* Passed on thanks for the plot provided, and noted appreciation of the links to the spatial data portal. Also noted on future use of the **NavSafety@amsa.gov.au** email address. Also suggested that they notify NOPSEMA regarding email address, as different to that shown in the relevant NOPSEMA guidance.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0513 163254 4276	459	Corangamite Catchment Management Authority	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0809 210941 9503	459	Corangamite Catchment Management Authority	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0520 095559 5800	130	Director of National Parks (DNP)	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted these two EPs were under the East Coast Gas Supply Project Offshore Project Proposal (OPP) and proximate to the Athena Supply Project EP area that they had recently commented on. Noted the only change to the relevant data provided for those was a small increase in the noise EMBA, and provided shape files for that EMBA. Provided copies of prior correspondence for the ECSP OPP and ASP EP for reference.	N/A	N/A
2025 0619 100603 7349	130	Director of National Parks (DNP)	2025-06-19	Email	In	Passed on thanks for opportunity to comment. No authorisations required from the DNP as no overlap with noise EMBA with AMPs. Noted new management plan for the South-east Marine Parks Network came into effect on 13 February 2025 **South-east Marine Parks Network Management Plan 2025** . In line with the management plan's objectives and values, the Environment Plan (EP) must identify and control all risks and impacts to Australian Marine Park values, including ecosystems, to an acceptable level. It must also show that all reasonable measures to avoid or minimise impacts have been considered, and that the activity aligns with relevant legislation referenced in the class approval. No further updates on this activity are required unless there is a change that introduces a new impact or overlap with a marine park, or if there is an emergency response. If an activity takes place in a marine park without authorisation from NOPSEMA or the Director of National Parks (DNP), it would breach the EPBC Act. Emergency Response Requirements: If oil or gas pollution occurs within or threatens a marine park, it must be reported immediately to the 24-hour Marine Compliance Duty Officer (0419 293 465). The report should include: Titleholder and incident details Location and affected marine park Planned response actions from the Oil Pollution Emergency Plan Confirmation that monitoring and evaluation reports will be shared when available Contact details of the response coordinator Depending on the incident's severity, the DNP may request regular Situation Reports (daily or weekly). All future correspondence should be sent to marineparksauthorisations@dcceew.gov.au, and queries are welcome.	No objection or claim of adverse impact. Reasonable requests made for notifications and actions to be taken should emergency events occur.	Standard response – no additional measures adopted. Annie-2 EP stakeholder notifications register updated accordingly.

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0709 165410 3590	130	Director of National Parks (DNP)	2025-07-09	Email	Out	Passed on thanks for advice regarding the two East Coast Supply Project (ECSP) EPs (Annie-2 development well EP & the Wells Connection EP) and confirming that DNP do not require further notification of progress made in relation to the activities unless details regarding the activities change and result in an overlap with or new impact to a marine park, or in event of emergency response. Noted on the new South-east Marine Parks Network management plan, and emergency response requirements, and confirmed the EPs will, with respect to management plan objectives and values: identify and manage all impacts and risks on all Australian marine park values (including ecosystem values) to an acceptable level and consider all reasonable options to avoid or reduce them to as low as reasonably practicable. clearly demonstrate that the activities will not be inconsistent with the relevant legislation listed in the class approval, and include notification requirements in event of an oil/gas pollution incident either within a marine park or are likely to impact on a marine park as soon as possible	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received. Noted no further consultation required at this point.								
2025 0513 161055 4361	157	Fisheries Research and Development Corporation (FRDC)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0809 211147 3305	157	Fisheries Research and Development Corporation (FRDC)	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0519 114106 5800	460	Heritage Victoria	2025-05-19	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0519 131239 9639	460	Heritage Victoria	2025-05-19	Email	In	Out of office auto reply	N/A	N/A
2025 0523 095702 4620	460	Heritage Victoria	2025-05-19	Email	In	Passed on thanks for the email. Queried how prior Heritage Victoria feedback is being implemented under these new EPs, and whether we are engaging with a qualified maritime archaeologist. Requested shapefiles for the projects. Suggested either email or meeting would be fine for further discussions.	No objection or claim of adverse impact. Reasonable query on how prior advice was considered for this EP. Reasonable request for shape files.	Confirmed that prior advice was considered as per Event ID 2025 0609 135820 7349 Provided shapefiles.
2025 0609 135820 7349	460	Heritage Victoria	2025-05-19	Email	Out	Passed on thanks for the response. Advised the name of the Archaeologist who specialises in Maritime and Underwater cultural heritage. Noted they will also review our site survey data for evidence of cultural heritage and will provide us a report including any potential UCH we may need to look at further, or report and avoid during our project activities. In	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						parallel, we are engaging with traditional owners about the projects and cultural sensitivities important to them in the marine environment. Suggested we could meet to run you through the projects and some of our preliminary seabed survey results.		
2025 0610 101539 2996	460	Heritage Victoria	2025-06-10	Email	In	Passed on thanks for response, and appreciated we had retained the services of experienced and trusted maritim4e archaeologists who would provide good advice. Appreciated the shape files and noted the shipwreck "Alfred" was located around 500m outside the operational area, although the estimated position of the Alfred is likely to be very inaccurate. Noted that if it were to be found to be within or adjacent to the operational areas, then the maritime archaeologists could advise on managing potential impacts noting the wreck is protected under Cth legislation. Accepted the offer to meet and provided suggested times.	N/A	N/A
2025 0610 121838 8781	460	Heritage Victoria	2025-06-10	Email	Out	Passed on thanks for the email, and suggested which times would work. Appreciated advice on "the Alfred" and will share with team for awareness.	N/A	N/A
2025 0610 144003 1077	460	Heritage Victoria	2025-06-10	Email	In	Confirmed meeting time.	N/A	N/A
2025 0809 212707 2931	460	Heritage Victoria	2025-08-09	Email	Out	Appreciated their time for the meeting on 18 June, and for the opportunity to provide an overview of activities proposed under the EP. Noted current estimated timing for the start of drilling on Annie-2 had moved from November to December 2025 now. Review of drop camera images has so far not picked up on any anthropogenic objects at the Annie anomaly site mentioned in our meeting (this was 2.8km for the planned Annie-2 well site), but our UCH consultants are continuing their review of the Geophysical data and images this month, and unless they advise otherwise, we plan to retain the 20m mooring buffer around this anomaly which the UCH consultants recommended following their initial review of the magnetometer data. Regarding the mention of Flinders Uni, we would be interested to discuss how the work we do, and data we collect, might be useful for student projects if a contact could be shared. We are now finalising consultation on these EPs, and below is appended a general mailout – Bulk mailout #3	N/A	N/A
2025 0809 212753 3459	460	Heritage Victoria	2025-08-09	Email	In	Auto reply	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 19 May 2025 and no request for additional time has been received.								
2025 0721 130932 9471	458	SA Department for Infrastructure and Transport (DIT)	2025-07-28	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted spill models showed areas of potential impact within those of the most recently reviewed OPEP. Provided a link to the OPEP that was part of the recently accepted ASP EP. Suggested that a major review was unlikely to be required.	N/A	N/A
2025 0820 153022 6553	458	SA Department for Infrastructure and Transport (DIT)	2025-08-20	Email	Out	Noted we have now completed our draft update of the OPEP which is attached and includes highlighted changes and notes. Upon reflection, we would consider that given the updated assets are in the same general location as the assets already described in the accepted OPEP, and these	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						assets do not increase the likelihood or threat of pollution, and that the worst case spill scenarios modelled in the current version of the OPEP have not increased, no further consultation is likely required.		
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 28 July 2025 and no request for additional time has been received. Considering recent review of OPEP, no further consultation considered necessary.								
2025 0721 115142 5800	366	Tasmanian EPA	2025-07-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted spill models showed areas of potential impact within those of the most recently reviewed OPEP. Provided a link to the OPEP that was part of the recently accepted ASP EP. Suggested that a major review was unlikely to be required.	N/A	N/A
2025 0721 115245 8928	366	Tasmanian EPA	2025-07-21	Email	In	Auto reply out of office	N/A	N/A
2025 0820 140032 7349	366	Tasmanian EPA	2025-08-20	Email	Out	Noted we have now completed our draft update of the OPEP which is attached and includes highlighted changes and notes. Upon reflection, we would consider that given the updated assets are in the same general location as the assets already described in the accepted OPEP, and these assets do not increase the likelihood or threat of pollution, and that the worst case spill scenarios modelled in the current version of the OPEP have not increased, no further consultation is likely required. Requested contact details provided be confirmed.	N/A	N/A
2025 0820 141857 7523	366	Tasmanian EPA	2025-08-20	Email	In	Agreed no further consultation on the OPEP required. Provided changes to emergency contacts.	No objection or claim of adverse impact.	N/A
2025 0820 150607 4604	366	Tasmanian EPA	2025-08-20	Email	Out	Passed on thanks for quick response. Noted contacts will be updated accordingly.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 July 2025 and no request for additional time has been received.								
2025 0721 131357 7740	380	Transport for NSW	2025-07-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted spill models showed areas of potential impact within those of the most recently reviewed OPEP. Provided a link to the OPEP that was part of the recently accepted ASP EP. Suggested that a major review was unlikely to be required.	N/A	N/A
2025 0820 145554 5800	380	Transport for NSW	2025-08-20	Email	Out	Noted we have now completed our draft update of the OPEP which is attached and includes highlighted changes and notes. Upon reflection, we would consider that given the updated assets are in the same general location as the assets already described in the accepted OPEP, and these assets do not increase the likelihood or threat of pollution, and that the worst case spill scenarios modelled in the current version of the OPEP have not increased, no further consultation is likely required. Requested contact details provided be confirmed.	N/A	N/A
2025 0826 100859 7349	380	Transport for NSW	2025-08-26	Email	In	Passed on thanks for the opportunity to review the EP. Provided corrected contact details for emergency response.	No objection or claim of adverse impact.	N/A
2025 0826 150221 3606	380	Transport for NSW	2025-08-26	Email	Out	Passed on thanks for the quick response, and advised contacts register will be updated accordingly.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 July 2025 and no request for additional time has been received.								
2025 0519 105115 7349	156	Victorian Department of Premier and Cabinet (DPC) First Peoples - State Relations	2025-05-19	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0519 131258 5819	156	Victorian Department of Premier and Cabinet (DPC) First Peoples - State Relations	2025-05-19	Email	Out	Offered to meet during our planned visit to Melbourne in early June.	N/A	N/A
2025 0809 213111 6393	156	Victorian Department of Premier and Cabinet (DPC) First Peoples - State Relations	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 19 May 2025 and no request for additional time has been received.								
2025 0516 123921 6773	127	Victorian Department of Transport and Planning (DTP)	2025-05-16	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4). Noted potential spills for these two EPs are smaller and sit spatially within the models used for the recently approved OPEP that was part of the accepted. ASP EP. Therefore we would not expect much of a review will be needed.	N/A	N/A
2025 0516 124415 2954	127	Victorian Department of Transport and Planning (DTP)	2025-05-16	Email	In	Out of office auto reply,	N/A	N/A
2025 0721 123014 8983	127	Victorian Department of Transport and Planning (DTP)	2025-07-21	Email	Out	Re-sent Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted spill models showed areas of potential impact within those of the most recently reviewed OPEP. Provided a link to the OPEP that was part of the recently accepted ASP EP. Suggested that a major review was unlikely to be required.	N/A	N/A
2025 0721 123158 8765	127	Victorian Department of Transport and Planning (DTP)	2025-07-21	Email	In	Email bounced	N/A	N/A
2025 0721 123159 7635	127	Victorian Department of Transport and Planning (DTP)	2025-07-21	Email	In	Email bounced	N/A	N/A
2025 0721 143607 6826	127	Victorian Department of Transport and Planning (DTP)	2025-07-21	Email	Out	Noted a change in personnel, so forwarded earlier email. Offered to meet to provide background.	N/A	N/A
2025 0722 132058 8762	127	Victorian Department of Transport and Planning (DTP)	2025-07-23	Email	In	Passed on thanks for the email, and appreciated the opportunity to be introduced to Amplitude Energy. Noted they would respond on the EP shortly.	N/A	N/A
2025 0722 135739 6289	127	Victorian Department of Transport and Planning (DTP)	2025-07-22	Email	Out	Suggested a meeting time	N/A	N/A
2025 0724 085257 7349	127	Victorian Department of Transport and Planning (DTP)	2025-07-24	Email	In	Noted name change to Amplitude Energy. Provided a copy of the updated guidance :" Victorian Joint Industry and State Oil Pollution Responses Guidance Note V3". Queried as to when the updated OPEP will be shared for comment so they can plan accordingly.	No objection or claim of adverse impact.	N/A
2025 0820 131551 7349	127	Victorian Department of Transport and Planning (DTP)	2025-08-20	Email	Out	Passed on appreciation for the opportunity to meet and to provide a general overview of Amplitude Energy"s activities. Shared the draft OPEP, and noted our view that no further consultation was required given the updated assets are in the same general location as the assets already described in the accepted OPEP, and these assets do not increase the likelihood or threat of pollution, and that the worst case spill scenarios modelled in the current version of the OPEP have not increased.	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0821 065701 4777	127	Victorian Department of Transport and Planning (DTP)	2025-08-21	Email	In	Noted they would be in touch if anything further needed, and enquired as to timeframe for a response.	No objection or claim of adverse impact.	N/A
2025 0821 092305 2550	127	Victorian Department of Transport and Planning (DTP)	2025-08-21	Email	Out	Noted that a response by the end of the following week would be good.	N/A	N/A
2025 0821 132655 7951	127	Victorian Department of Transport and Planning (DTP)	2025-08-21	Email	In	Advised they would endeavour to review OPEP in the following week and check as to whether further consultation on the OPEP is required.	N/A	N/A
2025 0827 130839 7872	127	Victorian Department of Transport and Planning (DTP)	2025-08-27	Email	In	Agreed no further consultation required as per the consultation criteria in the Victorian Joint Industry and State Oil Pollution Responses guidance note. Noting DTP reviewed Athena Supply Project (ASP) OPEP in August 2024 and the likelihood or threat of pollution and the modelled spill scenario remains the same. Highlighted changes that were recently made to Victoria's SEMP.	No objection or claim of adverse impact.	N/A
2025 0827 142748 9139	127	Victorian Department of Transport and Planning (DTP)	2025-08-27	Email	Out	Passed on thanks for confirming that the OPEP required no further consultation, and for highlighting changes to the SEMP guidance note.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 16 May 2025 and no request for additional time has been received.								
2025 0513 162422 1506	393	Victorian Fisheries Authority (VFA)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0809 213215 8676	393	Victorian Fisheries Authority (VFA)	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
The Department of the responsible State Minister 25(1)(b)								
2025 0514 142923 7759	272	Parks Victoria	2025-05-14	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0514 145759 6560	272	Parks Victoria	2025-05-14	Email	In	Auto response	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 14 May 2025 and no request for additional time has been received.								
2025 0513 160727 8763	107	Victorian Department of Energy, Environment and Climate Action Earth Resources Regulation (DEECA ERR)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0809 213427 3757	107	Victorian Department of Energy, Environment and Climate Action Earth Resources Regulation (DEECA ERR)	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 160932 8114	115	Victorian Department of Energy, Environment and Climate Action (DEECA) Biosecurity and Agriculture Services	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0809 213617 9908	115	Victorian Department of Energy, Environment and Climate Action (DEECA) Biosecurity and Agriculture Services	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
2025 0811 075051 7349	115	Victorian Department of Energy, Environment and Climate Action (DEECA) Biosecurity and Agriculture Services	2025-08-11	Email	Out	Noted some high-level comments have been sent (via webform) regarding continuing to work together to manage marine pest risks.	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0811 081516 6215	115	Victorian Department of Energy, Environment and Climate Action (DEECA) Biosecurity and Agriculture Services	2025-08-11	Email	In	Noted the branch was a relevant person as responsible for marine biosecurity for the State of Victoria. Acknowledges a strong collaborative relationship with Amplitude Energy, which shares vessel import data and risk management practices to prevent invasive marine species (IMS) spread. Agriculture Victoria confirmed the they seek to have this relationship continue, and remain pleased to provide advice on IMS risk and practical steps that can be taken to manage that risk. The department highlighted the presence of the invasive seaweed Undaria pinnatifida in the Port of Portland and advised Amplitude Energy to consider the risk of its transfer to offshore infrastructure via supply vessels Requested updates on activities under these EPs.	No objection or claim of adverse impact. Reasonable request that the nature of the current relationship continue. Reasonable request that we note presence of *Undaria pinnatifida* in the Port of Portland, and consider transfer risk.	Section 3.18 of the Description of the environment has been updated to note the existence of *Undaria pinnatifida* in Portland Harbour, and is noted in Table 4-3 of the EP. (See Event ID 2025 0812 154449 6174.
2025 0811 130256 9070	115	Victorian Department of Energy, Environment and Climate Action (DEECA) Biosecurity and Agriculture Services	2025-08-11	Email	Out	Passed on thanks for the response (via the web form), and that we would respond shortly.	N/A	N/A
2025 0812 154449 6174	115	Victorian Department of Energy, Environment and Climate Action (DEECA) Biosecurity and Agriculture Services	2025-08-12	Email	Out	Appreciated the department had visited the website. Passed on thanks for the comments, and confirmed we also appreciate the good working relationship and look forward to it continuing. Passed on thanks also for highlighting the *Undaria pinnatifida* risk. Noted the proposed Annie 2 development drilling activity, along with the installation of subsea infrastructure including flowlines connecting with the Casino Henry Netherby pipeline are in deeper waters (> 55m water depth which is outside of the preferred establishment range of the species Undaria pinnatifida (up to ~25m water depth). We consider the risk of establishment of invasive marine species in this particular instance to be minimal. Nonetheless, confirmed vessel biofouling and ballast water management is reviewed as part of our pre-mobilisation process to ensure vessels we hire adhere to Australian biofouling management and ballast water management requirements. In addition, noted we undertake reviews of IMS transfer risk (Amplitude IMS Risk Management Protocol) for each of our activities, which are informed by the biofouling management practices for the vessels and ROVs, as well as particular species to be aware of and the suitability of the offshore subsea equipment as potential substrate for establishment. Passed on appreciation for the response, and that we looked forward to catching up on a future visit . Confirmed we will keep Agriculture Victoria updated on these activities.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 163951 5723	573	Victorian Department of Energy, Environment and Climate Action Planning and Environmental Assessment (DEECA PEA)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0809 213723 7709	573	Victorian Department of Energy, Environment and Climate Action Planning and Environmental Assessment (DEECA PEA)	2025-08-09	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
Business, industry and research 25(1)(d)								
2025 0512 100024 3553	439	12 Apostles Cottages	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	439	12 Apostles Cottages	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	439	12 Apostles Cottages	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 100105 8552	1	12 Apostles Helicopters	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0512 165719 8189	1	12 Apostles Helicopters	2025-05-12	Email	In	Does not require further consultation on these activities.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received, and noted no further information was required.								
2025 0512 134312 9657	539	54 on Bank	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	539	54 on Bank	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	539	54 on Bank	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134312 4361	540	A1 Motel Port Fairy	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	540	A1 Motel Port Fairy	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	540	A1 Motel Port Fairy	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 100838 7566	5	AARNet Pty Ltd	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	5	AARNet Pty Ltd	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	5	AARNet Pty Ltd	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 100933 6464	11	Academy of Scuba	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	11	Academy of Scuba	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	11	Academy of Scuba	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130214 6604	601	Admella Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
00002025 0530 112556 7365	601	Admella Motel	2025-06-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	601	Admella Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114212 8780	497	Allansford Hotel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	497	Allansford Hotel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	497	Allansford Hotel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125915 9546	593	Allestree Beach Holiday Units	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	593	Allestree Beach Holiday Units	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	593	Allestree Beach Holiday Units	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 101016 2993	12	Allfresh Seafood	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	12	Allfresh Seafood	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	12	Allfresh Seafood	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113823 4994	446	Anchors	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	446	Anchors	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	446	Anchors	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130328 3514	604	Annesley House	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0530 124922 8831	604	Annesley House	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 104817 3606	604	Annesley House	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 104915 8999	15	Apollo Bay Chamber of Commerce	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	15	Apollo Bay Chamber of Commerce	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	15	Apollo Bay Chamber of Commerce	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 104840 4535	16	Apollo Bay Dive Centre and Surf n Fish	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	16	Apollo Bay Dive Centre and Surf n Fish	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	16	Apollo Bay Dive Centre and Surf n Fish	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114002 6084	466	Apollo Bay Fishing & Adventure Tours	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	466	Apollo Bay Fishing & Adventure Tours	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	466	Apollo Bay Fishing & Adventure Tours	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113945 5605	465	Apollo Bay Fishing Charters	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	465	Apollo Bay Fishing Charters	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	465	Apollo Bay Fishing Charters	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 104938 1503	21	Apollo Bay Surf & Kayak	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	21	Apollo Bay Surf & Kayak	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	21	Apollo Bay Surf & Kayak	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0512 105021 9135	23	Apollo Bay Visitor Information Centre	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	23	Apollo Bay Visitor Information Centre	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	23	Apollo Bay Visitor Information Centre	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134312 8114	541	Ashmont Motor Inn & Apartments	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	541	Ashmont Motor Inn & Apartments	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	541	Ashmont Motor Inn & Apartments	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130540 3041	606	Bagout Tuna Fishing Charters	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	606	Bagout Tuna Fishing Charters	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4	606	Bagout Tuna Fishing Charters	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 105713 6131	49	Beach Energy	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0519 144335 4438	49	Beach Energy	2025-05-12	Email	In	Out of office auto reply	N/A	N/A
2025 0530 112556 7365	49	Beach Energy	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	49	Beach Energy	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114228 4761	498	Best Western Colonial Village Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	498	Best Western Colonial Village Motel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	498	Best Western Colonial Village Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125844 8843	591	BIG4 Narrawong Island Holiday Park	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	591	BIG4 Narrawong Island Holiday Park	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	591	BIG4 Narrawong Island Holiday Park	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134312 8763	542	BIG4 Port Fairy Holiday Park	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	542	BIG4 Port Fairy Holiday Park	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	542	BIG4 Port Fairy Holiday Park	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114653 5406	508	Blue Whale Motor Inn & Apartments	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	508	Blue Whale Motor Inn & Apartments	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	508	Blue Whale Motor Inn & Apartments	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 105046 1662	57	Blue Whale Study	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	57	Blue Whale Study	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	57	Blue Whale Study	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 105305 5180	59	Boating Industry Association of Victoria	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	59	Boating Industry Association of Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	59	Boating Industry Association of Victoria	2025-08-06	Email	In/Out	Bulk mailout #3 - notification this phase of consultation is closing Unsubscribed via the " You can **unsubscribe from this list** if you no longer wish to be consulted on this project."	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134359 4276	63	Bridgeport Pty Ltd (New Hope Group)	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	63	Bridgeport Pty Ltd (New Hope Group)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	63	Bridgeport Pty Ltd (New Hope Group)	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0512 074653 5486	569	BW Digital	2025-05-12	Email	Out	Sent contact form with link to consultation website, and request for contact details.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received. No response to form, and no contact number provided. Consistent with previous efforts to consult.								
2025 0512 130424 6302	614	Casuarina Cabins	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	614	Casuarina Cabins	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	614	Casuarina Cabins	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134312 4726	543	Central Motel Port Fairy	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	543	Central Motel Port Fairy	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	543	Central Motel Port Fairy	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 105809 1311	73	CGG	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0512 121621 6215	73	CGG	2025-05-12	Email	In	Passed on thanks for the email, and advised that CGG would like to be provided ongoing updates.	N/A	N/A
2025 0530 112556 7365	73	CGG	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0530 112632 7972	73	CGG	2025-05-30	Email	In	Auto reply	N/A	N/A
2025 0806 141549 4254	73	CGG	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134312 1408	544	Cherry Plum Cottages	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	544	Cherry Plum Cottages	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	544	Cherry Plum Cottages	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114713 4419	509	City Heart Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	509	City Heart Motel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	509	City Heart Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134312 7381	545	Clonmara Country House & Cottages	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	545	Clonmara Country House & Cottages	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	545	Clonmara Country House & Cottages	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 110039 8013	76	Coastal Planning	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	76	Coastal Planning	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	76	Coastal Planning	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114257 4465	499	Comfort Inn On Raglan	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 124533 7349	499	Comfort Inn On Raglan	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 114638 3717	499	Comfort Inn On Raglan	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114742 9314	516	Comfort Inn Warrnambool International	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	516	Comfort Inn Warrnambool International	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	516	Comfort Inn Warrnambool International	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114541 8785	505	Commercial Hotel Panmure	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	505	Commercial Hotel Panmure	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	505	Commercial Hotel Panmure	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130506 9198	613	Committee for Portland	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0530 125020 9121	613	Committee for Portland	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 114901 7972	613	Committee for Portland	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 110138 9877	84	Conoco Phillips	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0519 144311 2117	84	Conoco Phillips	2025-05-12	Email	In	Auto response	N/A	N/A
2025 0519 131311 4463	84	Conoco Phillips	2025-05-19	Email	In	Advised no need for further consultation on these EPs, but would like to be kept up to date on progress of the EPs.	N/A	N/A
2025 0603 160716 5516	84	Conoco Phillips	2025-06-03	Email	In	Registered for webinar for 9 June 2025	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received. Advised no further consultation required.								
2025 0512 114436 6868	500	Convent at Koroit	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	500	Convent at Koroit	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	500	Convent at Koroit	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114841 5918	517	Darriwill Farm Warrnambool	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	517	Darriwill Farm Warrnambool	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	517	Darriwill Farm Warrnambool	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 111043 8496	93	Deakin University - School of Life and Environmental Sciences (Warrnambool Campus)	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0512 111143 5323	93	Deakin University - School of Life and Environmental Sciences (Warrnambool Campus)	2025-05-12	Email	In	Auto response	N/A	N/A
2025 0530 112556 7365	93	Deakin University - School of Life and Environmental Sciences (Warrnambool Campus)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	93	Deakin University - School of Life and Environmental Sciences (Warrnambool Campus)	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114828 1877	501	Deep Blue Hotel & Hot Springs	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	501	Deep Blue Hotel & Hot Springs	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	501	Deep Blue Hotel & Hot Springs	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 111626 7805	133	Diving Industry of Victoria	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	133	Diving Industry of Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	133	Diving Industry of Victoria	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134359 5218	546	Dockside Waterfront Indulgence	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	546	Dockside Waterfront Indulgence	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	546	Dockside Waterfront Indulgence	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134359 6332	548	Drift House Port Fairy	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	548	Drift House Port Fairy	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	548	Drift House Port Fairy	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134359 1481	549	Edge 17	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	549	Edge 17	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	549	Edge 17	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114859 2694	518	Eight Spence	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	518	Eight Spence	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	518	Eight Spence	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114916 8419	519	Elm Tree Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0526 164850 5623	519	Elm Tree Motel	2025-05-26	Email	In	Advised they do not need to be consulted further on these projects but would like to receive project updates.	N/A	N/A
2025 0526 165131 4652	519	Elm Tree Motel	2025-05-26	Email	Out	Passed on thanks for response, and confirmed we would provide project updates.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114931 2271	520	Fairholme Apartments	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	520	Fairholme Apartments	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	520	Fairholme Apartments	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130718 1957	611	Fin Chaser Fishing Charters - Portland	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	611	Fin Chaser Fishing Charters - Portland	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	611	Fin Chaser Fishing Charters - Portland	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134359 7904	550	Gardens Caravan Park Port Fairy	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Per comms with Moyne Shire, no more consultation direct with Gardens Caravan Park is required as they are council owned. See 2025 0513 095930 5671.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received. No further consultation required, as consulting direct with owner – Moyne Shire.								
2025 0512 113056 6259	178	Go Surf School	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 085513 5800	178	Go Surf School	2025-05-12	Email	In	Passed on thanks for reaching out. Acknowledged they were a relevant person, and noted they were engaging on a various projects across a large amount of technical data. Noted there was significant community opposition to these projects, and advocated for permanent removal of these projects. Noted they did not support the gas development under these EPs, Considered there was a lack transparency regarding Victoria's energy usage, and how these projects specifically applied to local demand. The gas supply/demand equation seemed unclear and held a belief most of the gas was destined for overseas. Requested guarantees and evidence regarding risk of accidental hydrocarbon release being minimised, and how we would ensure a rapid and effective response to any spill.	No objection or claim of adverse impact. Noted community opposition to gas development. Expressed concerns regarding gas market transparency in Victoria. This is considered outside scope of EP (see Event ID 2025 0520 090815 7349) Reasonable request for further information regarding mitigating and responding to hydrocarbon spills.	Provided requested further information regarding hydrocarbon spills. (See Event ID 2025 0520 090815 7349). No new measures adopted.

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0520 090815 7349	178	Go Surf School	2025-05-20	Email	Out	Noted not supportive of our gas development project. Regarding general concerns about transparency of Victoria's energy use, the clarity of supply and demand, and doubts about gas/profits going overseas, noted we can only comment on matters specific to Amplitude Energy and the activities under these EPs, and can confirm that we are an ASX listed company, and all the gas we produce goes into the domestic market. Regarding oil spill risk: We have not had any material spills or leaks of gas or condensate from our facilities (the wells or pipeline) or the vessels we hire for offshore campaigns. Though a spill or leak of gas or condensate from our subsea facilities, or spill of diesel oil from a vessel, is unlikely, there are no guarantees, and we do have response plans in place in case a spill or leak does occur. Our response plans are additional to the current national spill response plans, as are required under the regulations that apply to our industry. Our response plans include consideration of the area where we operate, and the resources we require to respond to a spill. Our plans also outline how our response would integrate with local, state and national response agencies. Our current Oil Pollution Emergency Plan (OPEP) can be found here on the NOPSEMA site: **OPEP**, and further information regarding oil spill risk and response can be found here: **Oil spill risk planning**, We agree that managing spill risk is a very important issue, and both mitigating this risk and being well prepared in our response planning are things we take very seriously.	N/A	N/A
2025 0530 112556 7365	178	Go Surf School	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0606 225928 8942	178	Go Surf School	2025-06-06	Email	Out	Passed on thanks for information about the ECSP EP, and invitation to attend community sessions and webinars. Raised community concerns about gas drilling in the Otway Basin, and the potential for companies to profit in what is considered an environmentally sensitive region. Noted they did not support the company operating there. Remain committed to the use only of existing pipelines within Victoria. Also expressed opposition to the export of any gas or oil beyond borders. Concerned about lack of transparency on supply and demand figures.	An objection was raised to the use of new pipelines in Victoria; we confirmed that this project did not require new pipelines onshore Victoria, nor in Victorian state waters. New flowlines would connect to existing pipelines under the ECSP: Wells connection EP. Therefore, we consider there is no merit to the objection. Gas market transparency considered outside the scope of this EP, but confirmed gas produced is destined for the domestic market only. (See Event ID 2025 0709 161003 4693.	Requested information provided to reasonable queries. No new measures adopted.
2025 0709 161003 4693	178	Go Surf School	2025-07-09	Email	Out	Passed on thanks for response. Noted regarding general views on gas drilling in the Otway Basin, and companies profiting from these ventures It was also noted they did not support our company operating in the Otway Basin. With respect to the strong view that Victoria's energy supply should be limited to being through existing pipelines within Victoria, noted our proposed activities under these 2 EPs do not include any additional pipelines in Victorian state waters or onshore Victoria. Our plan is to provide replacement supply through the connecting of new flowlines into	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						existing pipelines in Commonwealth waters. The gas will flow through those existing pipelines to our established onshore gas plant which currently operates below its designed capacity. Confirmed that all our gas is destined for domestic consumption, and not for export. Advised we could not comment on the general concern around market transparency, which is outside the scope of our EP, but did advise that domestic customers have expressed a strong desire to bring on more local gas supply.		
2025 0806 141549 4254	178	Go Surf School	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130143 3683	600	Golden Chain Victoria Lodge Motor Inn	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	600	Golden Chain Victoria Lodge Motor Inn	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	600	Golden Chain Victoria Lodge Motor Inn	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130601 7256	607	Gone Fishing Charters - Portland	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	607	Gone Fishing Charters - Portland	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	607	Gone Fishing Charters - Portland	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113220 7371	185	Great Ocean Road Coast and Parks Authority	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	185	Great Ocean Road Coast and Parks Authority	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0530 112632 3717	185	Great Ocean Road Coast and Parks Authority	2025-05-30	Email	In	Auto reply	N/A	N/A
2025 0806 141549 4254	185	Great Ocean Road Coast and Parks Authority	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113131 4910	186	Great Ocean Road Regional Tourism	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	186	Great Ocean Road Regional Tourism	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	186	Great Ocean Road Regional Tourism	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113157 2861	187	Great Ocean Road Tourist Park	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	187	Great Ocean Road Tourist Park	2025-06-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	187	Great Ocean Road Tourist Park	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134312 1506	536	Harmony at Tower Hill	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	536	Harmony at Tower Hill	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	536	Harmony at Tower Hill	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134359 5723	552	Hearn's Beachside Villas	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	552	Hearn's Beachside Villas	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	552	Hearn's Beachside Villas	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134230 3717	534	High View Family Cottages	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	534	High View Family Cottages	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	534	High View Family Cottages	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114951 6731	521	Hotel Warrnambool	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	521	Hotel Warrnambool	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	521	Hotel Warrnambool	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113244 1600	196	Institute for Marine and Antarctic Studies (IMAS) - University of Tasmania	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0516 081751 4258	196	Institute for Marine and Antarctic Studies (IMAS) - University of Tasmania	2025-05-16	Email	In	Confirmed receipt of email, and advised they may be in touch when the responsible person returns from absence.	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0516 081856 1715	196	Institute for Marine and Antarctic Studies (IMAS) - University of Tasmania	2025-05-16	Email	Out	Passed on thanks for email.	N/A	N/A
2025 0530 112556 7365	196	Institute for Marine and Antarctic Studies (IMAS) - University of Tasmania	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	196	Institute for Marine and Antarctic Studies (IMAS) - University of Tasmania	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 120548 5843	522	Kiki Holiday Apartments	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 124805 5800	522	Kiki Holiday Apartments	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 115655 1126	522	Kiki Holiday Apartments	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130635 3195	609	Kraken Fishing Charters	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	609	Kraken Fishing Charters	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	609	Kraken Fishing Charters	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125135 6215	553	Laneway Apartments	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	553	Laneway Apartments	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	553	Laneway Apartments	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113808 5661	445	Lochard Motor Inn	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	445	Lochard Motor Inn	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	445	Lochard Motor Inn	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 120604 2399	523	Mahogany Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	523	Mahogany Motel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	523	Mahogany Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114122 4157	494	Mako Ocean Adventures	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	494	Mako Ocean Adventures	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	494	Mako Ocean Adventures	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130101 6332	598	Mariner Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	598	Mariner Motel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	598	Mariner Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130653 5804	610	Matthew Hunt Fishing Services	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	610	Matthew Hunt Fishing Services	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	610	Matthew Hunt Fishing Services	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130349 8468	605	Melaleuca Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	605	Melaleuca Motel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	605	Melaleuca Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114451 2203	502	Mickey Bourke's Koroit Hotel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	502	Mickey Bourke's Koroit Hotel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	502	Mickey Bourke's Koroit Hotel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 120621 8750	524	Mid City Motel Warrnambool	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	524	Mid City Motel Warrnambool	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	524	Mid City Motel Warrnambool	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114525 3406	504	Mt Noorat Hotel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	504	Mt Noorat Hotel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	504	Mt Noorat Hotel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114137 2453	495	Mulloka Cruises	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	495	Mulloka Cruises	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	495	Mulloka Cruises	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130447 9874	615	Nelson Hotel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 125121 8283	615	Nelson Hotel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 115933 7846	615	Nelson Hotel	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125404 3606	554	Nivani Port Fairy Colonial Cottages	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	554	Nivani Port Fairy Colonial Cottages	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	554	Nivani Port Fairy Colonial Cottages	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130126 5218	599	NRMA Portland Bay Holiday Park	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	599	NRMA Portland Bay Holiday Park	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	599	NRMA Portland Bay Holiday Park	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 120638 7526	525	NRMA Warrnambool Riverside Holiday Park	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0530 112556 7365	525	NRMA Warrnambool Riverside Holiday Park	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	525	NRMA Warrnambool Riverside Holiday Park	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125427 3717	555	Ocean Ridge Retreat	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	555	Ocean Ridge Retreat	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	555	Ocean Ridge Retreat	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125444 7972	556	Old Market Inn Port Fairy	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	556	Old Market Inn Port Fairy	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	556	Old Market Inn Port Fairy	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114600 1555	506	Peterborough House	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	506	Peterborough House	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	506	Peterborough House	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113855 9959	447	Pitcher Vista	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	447	Pitcher Vista	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	447	Pitcher Vista	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125503 1126	558	Port Fairy Holiday Park	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	558	Port Fairy Holiday Park	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	558	Port Fairy Holiday Park	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								

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2025 0512 125858 1506	592	Portland Bay Lodge	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	592	Portland Bay Lodge	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	592	Portland Bay Lodge	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125956 5723	595	Portland Retro Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	595	Portland Retro Motel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	595	Portland Retro Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130041 1481	597	Portland Tourist Park	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	597	Portland Tourist Park	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	597	Portland Tourist Park	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114809 4427	493	Pro Red Fishing Charters	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	493	Pro Red Fishing Charters	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	493	Pro Red Fishing Charters	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130617 9820	608	Proline Fishing Charters	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	608	Proline Fishing Charters	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	608	Proline Fishing Charters	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130309 3374	603	Quest Portland	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	603	Quest Portland	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	603	Quest Portland	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130249 6830	602	Richmond Henty Hotel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	602	Richmond Henty Hotel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	602	Richmond Henty Hotel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113917 2599	448	Ride with Us	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	448	Ride with Us	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	448	Ride with Us	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114018 3882	472	Salty Dog Charters	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	472	Salty Dog Charters	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	472	Salty Dog Charters	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114627 6157	507	Schomberg Inn	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	507	Schomberg Inn	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0531 160559 1112	507	Schomberg Inn	2025-05-31	Email	In	Responded to email of 12 May 2025: Passed on thanks for the email, and had good awareness of the industry through direct experience in Australia and overseas. The industry locally supports their accommodation business, and they are supportive of the industry that they believe remains critical. Confident we will carry out our activities in an environmentally responsible manner, and wishes us well with the projects.	No objection or claim of adverse impact.	N/A
2025 0531 160559 3658	507	Schomberg Inn	2025-05-31	Email	In	In response to email of 30 May 2025: Appreciated the offer to attend the drop-in sessions, but unfortunately unable to attend.	No objection or claim of adverse impact.	N/A
2025 0531 161121 1406	507	Schomberg Inn	2025-05-31	Email	Out	Passed on appreciation. for their best wishes.	N/A	N/A
2025 0806 141549 4254	507	Schomberg Inn	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113315 7195	323	Sea Foam Villas Port Campbell	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	323	Sea Foam Villas Port Campbell	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	323	Sea Foam Villas Port Campbell	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125524 7846	559	Seacombe House	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	559	Seacombe House	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	559	Seacombe House	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113608 9702	441	Seahorse Coastal Villas	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	441	Seahorse Coastal Villas	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	441	Seahorse Coastal Villas	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130019 7904	596	Seascape Accommodation	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	596	Seascape Accommodation	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	596	Seascape Accommodation	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114040 7176	473	Sharkmen Charters	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	473	Sharkmen Charters	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	473	Sharkmen Charters	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114154 1824	496	Skydive 12 Apostles	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	496	Skydive 12 Apostles	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	496	Skydive 12 Apostles	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113637 3061	442	Southern Ocean Motor Inn	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	442	Southern Ocean Motor Inn	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	442	Southern Ocean Motor Inn	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 074946 7349	570	Subco	2025-05-12	Email	Out	Via webform, requested appropriate contact and sent website link.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received. Did not respond to webform, no contact number shown, consistent with prior consultation efforts.								
2025 0512 113437 1110	346	Superloop	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0512 113646 8261	346	Superloop	2025-05-12	Email	In	Auto response - blank	N/A	N/A
2025 0530 112556 7365	346	Superloop	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0530 112632 6215	346	Superloop	2025-05-30	Email	In	Auto reply	N/A	N/A
2025 0806 141549 4254	346	Superloop	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134312 9546	535	The Bank	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	535	The Bank	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	535	The Bank	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125543 8330	560	The Boatshed Waterfront B&B	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	560	The Boatshed Waterfront B&B	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	560	The Boatshed Waterfront B&B	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0512 114509 9486	503	The Cally	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	503	The Cally	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	503	The Cally	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125755 4361	561	The Coach House	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	561	The Coach House	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	561	The Coach House	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125615 7381	562	The Oak & Anchor Hotel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	562	The Oak & Anchor Hotel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	562	The Oak & Anchor Hotel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113733 9127	443	The Port O Call	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	443	The Port O Call	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	443	The Port O Call	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125633 1408	563	The Star Of The West Hotel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	563	The Star Of The West Hotel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	563	The Star Of The West Hotel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125656 4726	564	The Victoria Apartments	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	564	The Victoria Apartments	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	564	The Victoria Apartments	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 115534 7437	377	Timboon Action Group	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0811 130538 5982	377	Timboon Action Group	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing Also sent copy of bulk email #2 and apologised for missing them on the advertised community drop-in sessions and webinars. However, a link to the webinar recording was provided instead.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 120654 2156	526	Turn-In Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	526	Turn-In Motel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	526	Turn-In Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113523 5102	383	Twelve Apostles Tourism & Business Group	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0512 113558 1909	383	Twelve Apostles Tourism & Business Group	2025-05-12	Email	In	Auto reply	N/A	N/A
2025 0530 112556 7365	383	Twelve Apostles Tourism & Business Group	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	383	Twelve Apostles Tourism & Business Group	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113551 3994	397	Victorian Tourism Industry Council (VTIC)	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	397	Victorian Tourism Industry Council (VTIC)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	397	Victorian Tourism Industry Council (VTIC)	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125825 9657	568	Vocus	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	568	Vocus	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	568	Vocus	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134312 8843	538	Warreen Killarney BNB	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0530 112556 7365	538	Warreen Killarney BNB	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	538	Warreen Killarney BNB	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134137 5800	527	Warrnambool Central Court Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	527	Warrnambool Central Court Motel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	527	Warrnambool Central Court Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134151 6215	528	Warrnambool Diving & Firearms	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	528	Warrnambool Diving & Firearms	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	528	Warrnambool Diving & Firearms	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134206 3606	529	Warrnambool Gallery Apartments	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	529	Warrnambool Gallery Apartments	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	529	Warrnambool Gallery Apartments	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134230 8330	530	Warrnambool Holiday Village	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	530	Warrnambool Holiday Village	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	530	Warrnambool Holiday Village	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134230 7846	531	Warrnambool Motel and Holiday Park	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	531	Warrnambool Motel and Holiday Park	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0605 141549 4254	531	Warrnambool Motel and Holiday Park	2025-05-30	Drop-in session	In	Expressed support for the industry and positive impacts for local business.	No objection or claim of adverse impact.	N/A
2025 0806 141549 4254	531	Warrnambool Motel and Holiday Park	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134230 1126	532	Warrnambool Retreat	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	532	Warrnambool Retreat	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	532	Warrnambool Retreat	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 114100 3096	492	Warrnambool Tours	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	492	Warrnambool Tours	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	492	Warrnambool Tours	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 113750 3894	444	Waves Luxury Suites	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	444	Waves Luxury Suites	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	444	Waves Luxury Suites	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 134230 7972	533	Waves Motel and Apartments	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	533	Waves Motel and Apartments	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	533	Waves Motel and Apartments	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125934 4276	594	Whalers Rest Motor Inn	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	594	Whalers Rest Motor Inn	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	594	Whalers Rest Motor Inn	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 130407 8421	612	William Dutton Motel	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	612	William Dutton Motel	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	612	William Dutton Motel	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125719 8763	565	Wyntonia Beachfront Accommodation	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	565	Wyntonia Beachfront Accommodation	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	565	Wyntonia Beachfront Accommodation	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 125736 8114	566	Yambuk Lake Caravan Park	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Per comms with Moyne Shire, no more consultation direct with Gardens Caravan Park is required as they are council owned. See 2025 0513 095930 5671.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received. No further consultation required, as consulting direct with owner – Moyne Shire.								
2025 0513 164304 7904	590	Yumbah Aquaculture Narrawong	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	590	Yumbah Aquaculture Narrawong	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	590	Yumbah Aquaculture Narrawong	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
First Nations 25(1)(d)								
2025 0516 162910 7030	65	Bunurong Land Council Aboriginal Corporation	2025-05-16	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Requested that invitation to consult be shared with members as appropriate.	N/A	N/A
2025 0530 121749 4614	65	Bunurong Land Council Aboriginal Corporation	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars Requested sharing with members as appropriate.	N/A	N/A
2025 0722 130025 7349	65	Bunurong Land Council Aboriginal Corporation	2025-07-22	Call	Out	Passed on thanks for taking call and following up with relevant staff regarding consultation on the two EPs. Forwarded earlier emails to assist.	N/A	N/A
2025 0722 130517 2096	65	Bunurong Land Council Aboriginal Corporation	2025-07-22	Email	In	Passed on thanks for contact, and confirmed email has been passed on to relevant key staff members.	N/A - admin staff only.	N/A
2025 0722 132127 8720	65	Bunurong Land Council Aboriginal Corporation	2025-07-22	Email	Out	Passed on appreciation.	N/A	N/A
2025 0722 135145 7588	65	Bunurong Land Council Aboriginal Corporation	2025-07-22	Email	In	Expressed we were welcome	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0811 121531 8330	65	Bunurong Land Council Aboriginal Corporation	2025-08-04	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing2025 0806 141549 4254	N/A	N/A
2025 0811 121954 6861	65	Bunurong Land Council Aboriginal Corporation	2025-08-04	Email	In	Auto reply	N/A	N/A
2025 0811 122335 6628	65	Bunurong Land Council Aboriginal Corporation	2025-08-11	Email	In	Admin confirmed receipt of email.	N/A	N/A
2025 0811 124957 7838	65	Bunurong Land Council Aboriginal Corporation	2025-08-11	Email	Out	Passed on thanks for the confirmation.	N/A	N/A
2025 0811 125521 8286	65	Bunurong Land Council Aboriginal Corporation	2025-08-11	Email	In	Expressed we were welcome	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 16 May 2025 and no request for additional time has been received. Called to confirm receipt, and confirmed information passed on appropriately.								
2025 0423 160850 3185	140	Eastern Maar Aboriginal Corporation (EMAC)	2025-04-23	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 115039 7846	140	Eastern Maar Aboriginal Corporation (EMAC)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars Requested sharing with members as appropriate.	N/A	N/A
2025 0605 123106 7392	140	Eastern Maar Aboriginal Corporation (EMAC)	2025-06-05	Call	Out	Called EMAC CEO and left a message regarding consultation on two EPs, and that we were in Warrnambool should he like to meet.	N/A	N/A
2025 0722 123008 6092	140	Eastern Maar Aboriginal Corporation (EMAC)	2025-07-22	SMS	Out	Called EMAC CEO; left message regarding consultation on the two EPs.	N/A	N/A
2025 0722 123106 6354	140	Eastern Maar Aboriginal Corporation (EMAC)	2025-07-22	Call	Out	Called EMAC CEO and left a message regarding consultation on the two new EPs, requesting a call back.	N/A	N/A
2025 0811 122057 7381	140	Eastern Maar Aboriginal Corporation (EMAC)	2025-08-04	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing Full thread of prior emails appended.	N/A	N/A
2025 0827 110158 7789	140	Eastern Maar Aboriginal Corporation (EMAC)	2025-08-27	SMS	Out	Called (and left message) to follow up on the 2 ECSP EPs we have emailed you on. Noted we will be submitting the Annie-2 development drilling EP to NOPSEMA shortly so requested to advise if any further information required.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 23 April 2025 and no request for additional time has been received. Multiple calls have been made to elicit a response in additional to written materials being provided.								
2025 0722 135451 6920	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-07-22	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0725 100514 8908	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-07-25	Email	In	Passed on thanks for email, and advised previous contact was no longer there. The replacement will commence early June, and GLaWAC admin staff will connect us.	N/A	N/A
2025 0725 104202 7748	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-07-25	Email	Out	Passed on thanks. Advised Admin person that we will try to call after the 6th August (after new person starts).	N/A	N/A
2025 0725 125528 9493	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-07-25	Email	In	Admin team member confirmed they will connect us once the new team settles in.	N/A	N/A
2025 0812 133327 1534	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-08-05	Email	Out	Email noting phone call. Passed on thanks for offering to forward email to the new team. Also forwarded email from previous GLaWAC team member as a reference as promised during the call. Invited contact if further information was required.	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0817 155940 7905	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-08-17	Email	Out	GLaWAC admin staff introduced Amplitude Energy to new team members, and shared prior correspondence.	N/A	N/A
2025 0818 095520 7425	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-08-18	Email	In	New team member passed on thanks for the information. Advised they would review and consult internally, and checked as to whether we could extend the response time.	N/A	N/A
2025 0818 162113 4996	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-08-18	Email	Out	Passed on thanks for time taking call earlier same day. Confirmed request for additional time was not unreasonable, but requested that response be received by end of month as discussed during call. Noted the low likelihood of any impacts to GLaWAC Country. Noted GLaWAC's prior advice to us for our offshore projects " that GLaWAC *be contacted in such an emergency so that the right knowledge holders can be consulted. This is to ensure appropriate protection of any cultural heritage sites and cultural values that could be affected by a spill or response activities."* As discussed during consultation on our ongoing offshore operations and previous projects, confirmed our agreement with GLaWAC on the importance of this approach, and that we carry this commitment forward in relevant Environment Plans. We confirm that this commitment has been captured in the ECSP: Annie 2 Development Well EP. Noted intention to submit EP in the next 2-3 weeks, but confirmed that ongoing consultation provided further opportunity in influence how we carry out our activities. Advised we would be pleased to travel to meet in September to introduce team members to Amplitude Energy"s activities. Requested that GLaWAC advise if any further information or clarifications were required.	N/A	N/A
2025 0827 095027 7349	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-08-27	Email	Out	Referred to discussion on a potential meeting in September related to a new EP under development, and an overview of Amplitude Energy's activities. (Unrelated to this EP, but included in log for context).	N/A	N/A
2025 0828 141512 7349	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-08-28	Email	In	Confirmed prior advice that in the event of an emergency GLaWAC be contacted so that knowledge holders be consulted to ensure appropriate protection of any cultural heritage sites and values that could be affected by a spill or response activities. Looked forward to meeting in September (regarding other EP under development).	No objection or claim of adverse impact. Reasonable request to be notified in the case of an emergency event such as a hydrocarbon spill agreed as per Event ID 2025 0828 151110 5800.	GLaWAC included in emergency response contact register. Sections 7.7 and 8.3 of the EP have been updated to reflect. Annie-2 EP stakeholder notifications register updated accordingly.
2025 0828 151110 5800	191	Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)	2025-08-28	Email	Out	Appreciated the response, and confirmed we would capture the advice in the EP.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 22 July 2025 and no request for additional time has been received. Outcomes of consultation have been captured in the EP.								
2025 0519 192130 3741	588	Southern Oceans Protection Embassy Collective (SOPEC)	2025-05-19	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) via Facebook to SOPEC social media account	N/A	N/A
2025 0829 112354 9496	588	Southern Oceans Protection Embassy Collective (SOPEC)	2025-08-18	Social media message	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						Also sent copy of bulk email #2 and apologised for missing them on the advertised community drop-in sessions and webinars. However, a link to the webinar recording was provided instead.		
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 22 July 2025 and no request for additional time has been received. Relevant person was missed on notification for drop-in sessions/webinar, but flexible opportunity to meet was provided on in Bulk Mailout #1, and a link to the recorded webinar was provided.								
2025 0501 091759 4777	398	Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC)	2025-05-01	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 115316 8330	398	Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars Requested sharing with members as appropriate.	N/A	N/A
2025 0530 121749 7867	398	Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC)	2025-05-30	Email	Out	Resending Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0530 121800 7339	398	Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC)	2025-05-30	Email	In	Auto reply out of office, noting alternate email address.	N/A	N/A
2025 0811 140823 2411	398	Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC)	2025-08-04	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing Full thread of prior emails appended.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received. WTOAC has previously advised that it does not require it be consulted on these activities but does wish to be informed. The sharing of correspondence with members has still been encouraged, and the opportunity for 2-way dialogue has remained open. Reasonable efforts have been made to ensure WTOAC is informed per its requests.								
Fishery licence holder or representative body 25(1)(d)								
2025 0520 150124 7349	670	A B Hunter Fishing Nominees Pty Ltd	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 125541 5491	670	A B Hunter Fishing Nominees Pty Ltd	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 160808 6534	670	A B Hunter Fishing Nominees Pty Ltd	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	670	A B Hunter Fishing Nominees Pty Ltd	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0512 145002 6604	7	Abalone Council Victoria	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	7	Abalone Council Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	7	Abalone Council Victoria	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 145225 6830	8	Abalone Victoria (Central Zone) Ltd (AVCZ)	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0530 112556 7365	8	Abalone Victoria (Central Zone) Ltd (AVCZ)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	8	Abalone Victoria (Central Zone) Ltd (AVCZ)	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 145603 3374	17	Apollo Bay Fishermen's Cooperative	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	17	Apollo Bay Fishermen's Cooperative	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	17	Apollo Bay Fishermen's Cooperative	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 150447 3514	37	Australian Southern Bluefin Tuna Industry Association (ASBTIA)	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0520 121746 6215	37	Australian Southern Bluefin Tuna Industry Association (ASBTIA)	2025-05-20	Email	In	Noted their understanding of the purpose of consultation, but do not need to be consulted further on these activities. Would still like to receive project updates. Would require consultation on any projects that involved exploration activities such as seismic. In general, encouraged responsible use of existing infrastructure as opposed to greenfields developments.	No objection or claim of adverse impact. Reasonable request to receive project updates, and to be consulted on any future seismic data acquisition activities.	Confirmed we will continue to provide project updates, and consult should any projects involve seismic data acquisition. (See Event ID 2025 0520 134839 8306) Annie-2 EP stakeholder notifications register updated accordingly.
2025 0520 134839 8306	37	Australian Southern Bluefin Tuna Industry Association (ASBTIA)	2025-05-20	Email	Out	Passed on thanks for response. Confirmed we will provide project updates and invite further consultation should we consider undertaking seismic surveys.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received. Noted no further consultation needed.								
2025 0512 151105 8468	38	Australian Wildcatch Fishing	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	38	Australian Wildcatch Fishing	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	38	Australian Wildcatch Fishing	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 151301 8421	82	Commonwealth Fisheries Association (CFA)	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted we were also consulting with a number of Commonwealth fisheries licence holders via SETFIA, Tuna Australia and ASBTIA.	N/A	N/A
2025 0530 112556 7365	82	Commonwealth Fisheries Association (CFA)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	82	Commonwealth Fisheries Association (CFA)	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0520 151252 3717	574	Cull Fisheries Management/Cull Fisheries Pty Ltd	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 125735 4392	574	Cull Fisheries Management/Cull Fisheries Pty Ltd	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars.	N/A	N/A
2025 0616 093402 9859	574	Cull Fisheries Management/Cull Fisheries Pty Ltd	2025-06-16	Email	In	Responded via quick response table, to request that we continue to consult via email.	N/A	N/A
2025 0708 140238 9382	574	Cull Fisheries Management/Cull Fisheries Pty Ltd	2025-07-08	Email	In	Passed on thanks for response. Confirmed that we will continue to provide the opportunity to consult as requested, and will also advise when we are nearing dates when we will submit the respective EPs to the regulator (NOPSEMA) for assessment. In the meantime, advised they could contact us at any time if you have any queries or concerns.	N/A	N/A
2025 0811 141058 2049	574	Cull Fisheries Management/Cull Fisheries Pty Ltd	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0512 161707 3195	437	Fishermen Direct Pty Ltd	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted we were also consulting via SIV	N/A	N/A
2025 0513 085513 3606	437	Fishermen Direct Pty Ltd	2025-05-12	Email	In	Passed on appreciation for the email.	N/A	N/A
2025 0513 144502 6215	437	Fishermen Direct Pty Ltd	2025-05-13	Email	Out	Passed on thanks for email.	N/A	N/A
2025 0530 112556 7365	437	Fishermen Direct Pty Ltd	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	437	Fishermen Direct Pty Ltd	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
2025 0806 161612 7846	437	Fishermen Direct Pty Ltd	2025-08-06	Email	Out	Noted now representing a particular company. Also able to organise guard and scout boats.	N/A	N/A
2025 0807 084812 7349	437	Fishermen Direct Pty Ltd	2025-08-07	Email	Out	Wished him well, and advised information would be shared with operations team.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 151918 9874	283	Port Campbell Professional Fishermens Association	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	283	Port Campbell Professional Fishermens Association	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	283	Port Campbell Professional Fishermens Association	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0520 154137 4276	688	Raptis Fishing Licences Pty Ltd	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	688	Raptis Fishing Licences Pty Ltd	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	688	Raptis Fishing Licences Pty Ltd	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 150452 5800	671	Relevant Person ID 671	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	671	Relevant Person ID 671	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	671	Relevant Person ID 671	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 150903 6215	672	Relevant Person ID 672	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	672	Relevant Person ID 672	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	672	Relevant Person ID 672	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 151027 3606	673	Relevant Person ID 673	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	673	Relevant Person ID 673	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 162245 2303	673	Relevant Person ID 673	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	673	Relevant Person ID 673	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.3.3. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 151509 7972	674	Relevant Person ID 674	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	674	Relevant Person ID 674	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 160228 7100	674	Relevant Person ID 674	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	674	Relevant Person ID 674	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 151658 1126	675	Relevant Person ID 675	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	675	Relevant Person ID 675	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 161218 2771	675	Relevant Person ID 675	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	675	Relevant Person ID 675	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 151811 7846	676	Relevant Person ID 676	2025-07-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	676	Relevant Person ID 676	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	676	Relevant Person ID 676	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 151916 8330	677	Relevant Person ID 677	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0520 192039 1043	677	Relevant Person ID 677	2025-05-20	Email	In	Passed on thanks for the email. Noted that company operates SSJF and the BSCZSF, with operations based out of Portland, and focus area offshore Otway, including areas near Peterborough. 1. Noted overlap of proposed activities area with region that they actively fish for arrow squid, with the main season running from November through to May/June each year. Concerns raised: a) disruption to squid aggregation from noise, traffic and light b) Temporary exclusion areas during activities c) Cumulative pressures on operations if activities prolonged or staggered withing the operating window 2026-2030 2. Noted that currently their scallop fishing activities are east of Cape Otway, so direct impacts would not be expected. But this could change in future seasons. 3. In order to provide an informed response, request: a) Coordinates or shapefiles of activities footprint. b) Information on impact assessments with respect to commercial fisheries, arrow squid in particular.	No objections or claims. Reasonable concerns raised with respect to a) disruption from noise, traffic and light, b) temporary exclusion zones and c) cumulative impacts responded to in Event ID 2025 0609 184241 7349. Reasonable request for further information: a) coordinates or shapefiles, b) impact assessments, and c) outline of mitigations proposed; responded to in Event ID 2025 0609 184241 7349. Reasonable request to continue to be consulted, to meet and to be provided project updates confirmed in response in Event ID 2025 0609 184241 7349. No objection or claim of adverse impact.	Section 4.4.3 -Social Receptors, updated to note likely activity.

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						c) Outline of mitigations proposed, including potential seasonal or operational buffers. 4. Noted they wish to continue to be consulted as relevant persons and would like to be notified on updates to the EPs, and have the opportunity to meet to discuss operational overlap and risk mitigations. Requested confirmation of receipt of the response, and next steps. Noted appreciation in being consulted.		
2025 0523 164505 9337	677	Relevant Person ID 677	2025-05-26	Email	In	Passed on thanks for response. Advised that could not meet in-person while Amplitude Energy in Portland as will be away. Please to continue the discussion over email, and happy to provide information about the fishing operations as needed.	No objection or claim of adverse impact.	N/A
2025 0526 084804 4132	677	Relevant Person ID 677	2025-05-26	Email	Out	Appreciated the response, and noted that the EPs were still under preparation and would revert soon on queries.	N/A	N/A
2025 0529 113606 7290	677	Relevant Person ID 677	2025-05-27	Email	Out	Apologised for getting person's name wrong.	N/A	N/A
2025 0609 184241 7349	677	Relevant Person ID 677	2025-06-09	Email	Out	Provided shapefiles as requested, and the following responses to queries and concerns: Potential Interaction with Squid Fishing Grounds We note that you actively fish in the proposed operational areas, with the main season running from November through to May/June. Concerns a) Disruption to squid aggregation and migration patterns from underwater noise, vessel traffic, and light interference. In the Offshore Project Proposal (**NOPSEMA OPP**), Amplitude have assessed impacts from those aspects as follows: <u>Vessel traffic</u> Our project will result in increased vessel traffic, though not by a great deal. We will use 1-4 vessels (sometimes including a rig) to do our project activities. We hire vessels temporarily when we need them (and when they are available), and we tend to mobilise them out of Portland or Geelong. Our project operational areas overlaps 4.02% of the low intensity area of the Southern Squid Jig Fishery (Figure 6-78 of the OPP), though please note, the operational areas are not an exclusion area, you can still fish throughout most of it (see information on exclusion zones below), it's just you will be more likely to see a vessel we have hired in that area. Once the vessels have completed their scopes, they leave. We then bring a vessel back into the area for inspections and maintenance every ~3-5 years. We have been doing these inspection and maintenance activities in this region over our existing subsea equipment for over 20-years. Once the subsea equipment has reached the end of its useful life, we bring vessels back in to decommission it. <u>Underwater noise</u>	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						Underwater noise will be generated from well construction and installation activities and is similar in nature and scale to other shipping noise in the region. We know that the vessels will generate levels of noise that can disturb marine fauna, though the modelling we have completed indicates that the risk of disturbance to marine fauna is localised around the vessels. For more information please refer to Sections 8.1 and 8.2 of the **Amplitude Energy Offshore Project Proposal**, which assesses the whole development. Impacts associated with the noise emissions from the activities specific to the Annie-2 Development well EP & the ECSP Wells Connection EP currently in preparation will be assessed and described in these EPs bespoke to the location and type of each activity. <u>Light interference</u> Well construction, vessel and MODU operations are expected to introduce additional light into the marine environment from flaring, navigation and safety lighting. This introduces a potential risk of change in fauna behaviour. Water depths within the operational area are suitable for arrow squid, that are highly attracted to artificial light at night hence light being used as a tool by squid fishers to attract squid. Light emissions from the vessels we use would be expected to temporarily attract squid. Behavioural changes to marine invertebrates from artificial light at night is expected to be localised and short term and gone once the vessels have completed their scopes. Light from flaring of gas during well construction can take 24-60-hours and will be an additional light source for that short period. For more information please refer to Section 8.3 of the **Amplitude Energy Offshore Project Proposal**. Impacts associated with the light emissions for each of the activities specific to the Annie-2 Development well EP & the ECSP Wells Connection EP currently in preparation will be assessed and described in these EPs bespoke to the location and type of each activity. b) Temporary exclusion from productive fishing grounds during drilling, installation, or integrity operations. <u>ECSP: Annie-2 development well EP:</u> The development well will take up to 60 days to drill, and a temporary exclusion zone of 3km radius will be in place for safety purposes. While the activity may take place in the window of 2026-2029, this is a discrete activity that will only occur once. The EP also includes provision for plug and abandonment activities, in the event that the targeted reservoir is not commercially viable. <u>ECSP: Wells connection EP</u> The flowline and umbilical laying and connections will be planned for a single activity taking up to 120 days across the project area during that time, and these activities require the completion of the development wells to connect to. There is provision for some additional geophysical survey (not seismic) work that may take up to 60 days. (refer to section 4.3.1 of the **Amplitude Energy Offshore Project Proposal**, for more detail on what these surveys entail) <u>Both EPs:</u> Both EPs provide for routine inspection, maintenance and repair work of up to 60 days. These are only occasional events similar to those activities currently undertaken on our existing infrastructure.		

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						Summary: There appears to be good opportunity to have minimal disruption to fishing activities through the setting up of good communications. If you like, this is something we can explore further when we meet, and it would be good to get an understanding of how interactions with past operations may have affected your fishing, and how we can learn form that experience. c) Cumulative operational pressure if activities are prolonged or staggered over the multi-year window (2026â€“2030). As per b. above, operations are of limited duration over various locations within the operational area defined in the OPP, and different times within that 5-year combined window. They are staggered with significant time periods between successive operations likely, but activities are not prolonged. Request d) We request consideration be given to the seasonal nature of the squid fishery and that operations are scheduled to avoid the key fishing period wherever possible. We will consider the seasonal nature of the squid fishery during our planning for activities, however it's worth being transparent at this stage that avoiding a particular time of year is often impracticable for the activities we do because we are at the mercy of the international markets for specialist vessel availability, and weather windows, which can be few and far between in the Otway as you would know. Avoiding the entire window November through to May would not be possible for our activities, though once the subsea systems are operational, most years we will not have vessel out there. 2. Scallop Fishery Consideration Based on the fishing data from 2016 to present, Amplitude note that you currently don't fish west of Cape Otway, so impacts from our activities would be unlikely. Should this change, our environment plans provide for ongoing consultation throughout the life of the EP, so opportunities to meet with us and understand how our activities may impact you remain available. 3. Requests for Further Information a) Detailed coordinates or shapefiles of the proposed activity footprint, so we can assess any spatial overlap with our known fishing grounds. Shapefiles are attached for both EPs. Please refer to **Figures 6 -66 and 6-76 in the OPP** showing the position of the operational area relative to the fishery reporting grids and relative intensity. b) Clarification on environmental impact assessments relating to commercial fisheries â€" particularly arrow squid. Broad overview of assessment is as follows, and specific elements have been provided in 1.b. above. The OPP assesses the changes to the functions, interests and activities of other marine users as impacts likely to be localised and temporary due to small and temporary exclusion zones, and the low level of use of the operational area by commercial fisheries, the small proportion of fishery management areas covered by the operational area. (See **OPP Section 8.9)**.		

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						The OPP defines acceptable levels for each impact to evaluate acceptability and whether activities are managed to reduce impacts and risks to a low as reasonably practicable. The OPP defines the acceptable level of impact as shown below, and the evaluation concluded that the impacts and risks were acceptable: Social and commercial amenity values of the Commonwealth Marine Area within the region are maintained consistent with the rights of all marine users Impacts and risks to other marine users associated with activities defined in this OPP will not lead to substantial adverse effects on the sustainability of commercial fisheries c) An outline of any specific mitigation strategies proposed to minimise disruption to fishing activities, including potential seasonal restrictions or operational buffers. The likely control measures to be included within the EPs for these activities include: Marine exclusion and caution zones (not exceeding distances needed for safe operations) applied around vessels and the MODU (drilling rig) requested via notice to mariners, issued by the Australian Hydrographic Office (AHO). All installed subsea infrastructure charted on relevant mariners charts as well as petroleum safety exclusion areas Marine Assurance Processes to ensure vessels and MODU adhere to navigational safety requirements Fisheries damages protocol to compensate for fishing equipment damage (if damaged by project infrastructure). Ongoing consultation As touched on above, we consider the best approach is to maintain an ongoing dialogue (consultation) that provides for good planning and communications prior to and during the proposed activities. Ideally upon the conclusion of each activity, discussions with interested commercial fishing operators could be used to improve how future operations would then be coordinated through lessons learned. But the opportunity to meet would allow us to further consider the best approach. 4. Ongoing Consultation We confirm that we will continue to consider you a relevant person under Section 25 of the OPGGS(E) Regulations and that we will: a) Notify you of updates to the proposed activities to be carried out under these environment plans b) Further consultation prior to the first activities to be carried out under these EPs, to establish any on-water communications and cooperation protocols if not established prior. Provision of 14 days' notice prior to commencement of any activities to be carried out under these EPs, or as otherwise agreed under 4.b. above. c) We would be pleased to meet online or via phone, or in person on your return from leave.		

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0811 192710 9495	677	Relevant Person ID 677	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 152055 7381	678	Relevant Person ID 678	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	678	Relevant Person ID 678	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 162826 1560	678	Relevant Person ID 678	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	678	Relevant Person ID 678	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 152201 1408	679	Relevant Person ID 679	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	679	Relevant Person ID 679	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	679	Relevant Person ID 679	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 152306 4726	680	Relevant Person ID 680	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	680	Relevant Person ID 680	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 161058 1940	680	Relevant Person ID 680	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	680	Relevant Person ID 680	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 152422 8763	681	Relevant Person ID 681	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	681	Relevant Person ID 681	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 163551 5884	681	Relevant Person ID 681	2025-08-04	SMS	In/Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment.	N/A	N/A

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						Details can be found here **https://amplitudeenergy.com.au/consultation** RP 681 advised he understood the industry with years of experience working in a refinery. Confirmed he also had trawl and scallop licenses in addition to squid jig. We wished him well with fishing, and thanked him for confirmation on licences held.		
2025 0806 141549 4254	681	Relevant Person ID 681	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 153254 8114	682	Relevant Person ID 682	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	682	Relevant Person ID 682	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 161814 7465	682	Relevant Person ID 682	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	682	Relevant Person ID 682	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 153355 4361	683	Relevant Person ID 683	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	683	Relevant Person ID 683	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 155533 9664	683	Relevant Person ID 683	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	683	Relevant Person ID 683	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 153450 9657	684	Relevant Person ID 684	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	684	Relevant Person ID 684	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0804 164147 9391	684	Relevant Person ID 684	2025-08-04	Email	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	684	Relevant Person ID 684	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 153551 8843	685	Relevant Person ID 685	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	685	Relevant Person ID 685	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 163638 6710	685	Relevant Person ID 685	2025-08-04	Email	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	685	Relevant Person ID 685	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 153742 1506	686	Relevant Person ID 686	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	686	Relevant Person ID 686	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 162338 2637	686	Relevant Person ID 686	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	686	Relevant Person ID 686	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 153843 9546	687	Relevant Person ID 687	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	687	Relevant Person ID 687	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 161947 3264	687	Relevant Person ID 687	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	687	Relevant Person ID 687	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 154302 5723	689	Relevant Person ID 689	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	689	Relevant Person ID 689	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	689	Relevant Person ID 689	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 154402 7904	690	Relevant Person ID 690	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	690	Relevant Person ID 690	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 160427 1322	690	Relevant Person ID 690	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	690	Relevant Person ID 690	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 154612 1481	691	Relevant Person ID 691	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	691	Relevant Person ID 691	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 160046 3724	691	Relevant Person ID 691	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	691	Relevant Person ID 691	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 154830 5218	693	Relevant Person ID 693	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	693	Relevant Person ID 693	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	693	Relevant Person ID 693	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 154906 3683	694	Relevant Person ID 694	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	694	Relevant Person ID 694	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 162700 9830	694	Relevant Person ID 694	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	694	Relevant Person ID 694	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 154946 6604	695	Relevant Person ID 695	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	695	Relevant Person ID 695	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 161312 8969	695	Relevant Person ID 695	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	695	Relevant Person ID 695	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 155026 6830	696	Relevant Person ID 696	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	696	Relevant Person ID 696	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	696	Relevant Person ID 696	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 155120 3374	697	Relevant Person ID 697	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	697	Relevant Person ID 697	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 163814 8842	697	Relevant Person ID 697	2025-08-04	Email	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	697	Relevant Person ID 697	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0520 155405 3514	698	Relevant Person ID 698	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	698	Relevant Person ID 698	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 160713 7562	698	Relevant Person ID 698	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	698	Relevant Person ID 698	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0521 090323 9960	699	Relevant Person ID 699	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	699	Relevant Person ID 699	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 164330 6101	699	Relevant Person ID 699	2025-08-04	Email	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	699	Relevant Person ID 699	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 090450 2597	700	Relevant Person ID 700	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	700	Relevant Person ID 700	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 163000 5087	700	Relevant Person ID 700	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	700	Relevant Person ID 700	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 090935 5883	701	Relevant Person ID 701	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	701	Relevant Person ID 701	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0804 163100 4717	701	Relevant Person ID 701	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	701	Relevant Person ID 701	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 091130 4619	702	Relevant Person ID 702	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0521 091201 2245	702	Relevant Person ID 702	2025-05-21	Email	In	Auto reply	N/A	N/A
2025 0530 112556 7365	702	Relevant Person ID 702	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	702	Relevant Person ID 702	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 091227 9062	703	Relevant Person ID 703	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	703	Relevant Person ID 703	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 160615 5790	703	Relevant Person ID 703	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	703	Relevant Person ID 703	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 092305 4466	704	Relevant Person ID 704	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	704	Relevant Person ID 704	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0805 093823 4666	704	Relevant Person ID 704	2025-08-04	Email	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	704	Relevant Person ID 704	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0521 092622 4361	706	Relevant Person ID 706	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	706	Relevant Person ID 706	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 161626 4872	706	Relevant Person ID 706	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	706	Relevant Person ID 706	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 092728 2835	707	Relevant Person ID 707	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	707	Relevant Person ID 707	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 160855 7085	707	Relevant Person ID 707	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	707	Relevant Person ID 707	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 092816 1406	708	Relevant Person ID 708	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	708	Relevant Person ID 708	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	708	Relevant Person ID 708	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 092859 9653	709	Relevant Person ID 709	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	709	Relevant Person ID 709	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 161444 9057	709	Relevant Person ID 709	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	709	Relevant Person ID 709	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 093028 6216	710	Relevant Person ID 710	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	710	Relevant Person ID 710	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 162059 9089	710	Relevant Person ID 710	2025-08-05	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	710	Relevant Person ID 710	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 093117 6053	711	Relevant person ID 711	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	711	Relevant person ID 711	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 162149 3235	711	Relevant person ID 711	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	711	Relevant person ID 711	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 093153 3654	712	Relevant Person ID 712	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	712	Relevant Person ID 712	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 160939 8145	712	Relevant Person ID 712	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	712	Relevant Person ID 712	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 093318 5450	713	Relevant Person ID 713	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	713	Relevant Person ID 713	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	713	Relevant Person ID 713	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 093614 4447	714	Relevant Person ID 714	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	714	Relevant Person ID 714	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	714	Relevant Person ID 714	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0521 093657 2738	715	Relevant Person ID 715	2025-05-21	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	715	Relevant Person ID 715	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	715	Relevant Person ID 715	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 21 May 2025 and no request for additional time has been received.								
2025 0530 155009 6215	717	Relevant Person ID 717	2025-07-30	Email/Phone call	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Bulk mailout #2 - notification of community drop-in sessions and webinars Noted from discussions: The Bass Strait Scallop Industry Association doesn't effectively exist There is large overlap in licence holdings across the Cth, Tasmanian and Victorian managed scallop fisheries. The current activity level in the Victorian managed fishery is relatively low Through MSC certification work with them, Relevant Person ID 717 is able to assist in supporting consultation with a small number of licence holders who actually represent around 50% of the Cth quota This should simplify the consultation effort for them	No objection or claim of adverse impact.	N/A
2025 0811 144517 5195	717	Relevant Person ID 717	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
2025 0811 144559 2975	717	Relevant Person ID 717	2025-08-11	Email	In	Auto reply	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 30 July 2025 and no request for additional time has been received.								
2025 0512 152117 9198	317	Scallop Fishermens Association Inc.	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0519 143706 8566	317	Scallop Fishermens Association Inc.	2025-05-12	Email	In	Auto response - warning- email not yet delivered. (No rejection email received and subsequent emails OK)	N/A	N/A
2025 0530 112556 7365	317	Scallop Fishermens Association Inc.	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	317	Scallop Fishermens Association Inc.	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 152353 3041	318	Scallop Fishermens Association of Tasmania	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	318	Scallop Fishermens Association of Tasmania	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	318	Scallop Fishermens Association of Tasmania	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0515 193944 7349	327	Seafood Industry Victoria (SIV)	2025-05-15	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4). Provided information sheets and suggested wording for SIV members.	N/A	N/A
2025 0516 123808 9102	327	Seafood Industry Victoria (SIV)	2025-05-16	Email	In	Under SIV agreement all correspondence is sensitive unless otherwise advised.	No objection or claim of adverse impact.	N/A
2025 0519 131408 3426	327	Seafood Industry Victoria (SIV)	2025-05-16	Email	Out	Passed on thanks for response.	N/A	N/A
2025 0530 163817 1580	327	Seafood Industry Victoria (SIV)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars. Sought advice on best way to get this to members given timing.	N/A	N/A
2025 0602 092550 8071	327	Seafood Industry Victoria (SIV)	2025-06-02	Email	In	SIV offered to email information about drop-in sessions and webinars to members, along with the relevant information sheets.	No objection or claim of adverse impact.	N/A
2025 0602 093115 4760	327	Seafood Industry Victoria (SIV)	2025-06-02	Email	Out	Confirmed that the suggestion was very good, and requested they proceed to email members.	N/A	N/A
2025 0603 153940 5330	327	Seafood Industry Victoria (SIV)	2025-06-02	Email	Out	Confirmed information would be sent to members 2 June 2025.	N/A	N/A
2025 0807 092935 5800	327	Seafood Industry Victoria (SIV)	2025-08-07	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing Checked as to best way to share Bulk mailout #3 - notification this phase of consultation is closing and provided a link to the mailout.	N/A	N/A
2025 0808 072700 4038	327	Seafood Industry Victoria (SIV)	2025-08-08	Email	In	Provided options for distribution.	No objection or claim of adverse impact.	N/A
2025 0808 143553 2570	327	Seafood Industry Victoria (SIV)	2025-08-08	Email	Out	Passed on thanks, and suggested an option for distribution.	N/A	N/A
2025 0812 114705 6368	327	Seafood Industry Victoria (SIV)	2025-08-12	Email	In	Confirmed link to Bulk mailout #3 - notification this phase of consultation is closing would be sent to members.	No objection or claim of adverse impact.	N/A
2025 0812 144405 9248	327	Seafood Industry Victoria (SIV)	2025-08-12	Email	Out	Passed ion thanks	N/A	N/A
2025 0814 085747 7349	327	Seafood Industry Victoria (SIV)	2025-08-14	Email	Out	Query regarding exclusion zones (Consultation with SIV is not to be published unless specifically agreed otherwise by SIV)	No objection or claim of adverse impact.	N/A
2025 0815 104432 7349	327	Seafood Industry Victoria (SIV)	2025-08-15	Email	Out	Responded to query on safety zones, For the Annie-2 well, we anticipate the gazettal of a 500m radius Petroleum Safety Zone (PSZ) which would apply to all fishing methods. Regarding the new flowlines /umbilicals [different EP but included here for completeness], these would be marked on charts, but we would not anticipate any associated PSZs. Trawling would not be allowed across these flowlines, nor anchoring, but there would be	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						no other fishing restrictions such as restrictions on the deployment of lobster pots.		
2025 0818 080735 1367	327	Seafood Industry Victoria (SIV)	2025-08-18	Email	In	Passed on thanks, and would contact if further queries.	No objection or claim of adverse impact.	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 15 May 2025 and no request for additional time has been received. SIV has shared consultation materials with members, which enables their members to respond directly or via SIV should they choose to. No issues were raised by SIV or its members.								
2025 0520 154656 6332	692	Ship Agencies Australia Pty Ltd	2025-05-20	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	692	Ship Agencies Australia Pty Ltd	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0804 160524 8862	692	Ship Agencies Australia Pty Ltd	2025-08-04	SMS	Out	Noted that we previously made contact by email inviting consultation on 2 environment plans for gas field development activities offshore Peterborough Victoria. Advised this is just a reminder in case there was a wish to comment. Details can be found here **https://amplitudeenergy.com.au/consultation**	N/A	N/A
2025 0806 141549 4254	692	Ship Agencies Australia Pty Ltd	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 20 May 2025 and no request for additional time has been received.								
2025 0516 154915 2476	338	South East Trawl Fishing Industry Association (SETFIA)	2025-05-16	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0520 133423 4165	338	South East Trawl Fishing Industry Association (SETFIA)	2025-05-20	Email	In	Noted SETFIA were working on this and would respond,	No objection or claim of adverse impact.	N/A
2025 0520 133423 8987	338	South East Trawl Fishing Industry Association (SETFIA)	2025-05-20	Email	Out	Confirmed mailout sent to SETFIA and SSIA members. Noted that proposed activities area appeared to overlap several Victorian managed fisheries (SIV), and the shark and squid fisheries. Suggested discussing the production of an updated data report using new techniques.	No objection or claim of adverse impact.	N/A
2025 0520 134817 4493	338	South East Trawl Fishing Industry Association (SETFIA)	2025-05-20	Email	Out	Noted SPF were not active in the area. Regarding SIV, confirmed we are in touch with respect to Victorian managed fisheries. Regarding squid, advised we were planning to contact individual SSJF members. Suggested discussing the data report on next catch-up.	N/A	N/A
2025 0530 145350 3358	338	South East Trawl Fishing Industry Association (SETFIA)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0530 150759 6345	338	South East Trawl Fishing Industry Association (SETFIA)	2025-05-30	Email	In	Checked if message was on a website that could be used.	No objection or claim of adverse impact.	N/A
2025 0530 152533 4900	338	South East Trawl Fishing Industry Association (SETFIA)	2025-06-30	Email	Out	Considered weblink a good idea, and sent link along with suggested note to members advising of drop in sessions and link to details.	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0530 180706 9746	338	South East Trawl Fishing Industry Association (SETFIA)	2025-05-30	Email	In	Confirmed message would be sent next day.	No objection or claim of adverse impact.	N/A
2025 0531 160717 2437	338	South East Trawl Fishing Industry Association (SETFIA)	2025-05-31	Email	Out	Passed on our appreciation.	N/A	N/A
2025 0811 151826 3583	338	South East Trawl Fishing Industry Association (SETFIA)	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing Provided version for SMS with weblink.	N/A	N/A
2025 0811 154034 9547	338	South East Trawl Fishing Industry Association (SETFIA)	2025-08-11	Email	Out	Confirmed SMS with link to Bulk mailout #3 - notification this phase of consultation is closing will be sent next day.	No objection or claim of adverse impact.	N/A
2025 0811 155940 4049	338	South East Trawl Fishing Industry Association (SETFIA)	2025-08-11	Email	Out	Passed on thanks.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 16 May 2025 and no request for additional time has been received. Consultation covers SETFIA and SSIA members. SPF members not active in area. SETFIA has shared consultation emails with members, which enables their members to respond directly should they choose to. No issues were raised by SETFIA or its members.								
2025 0512 151542 6302	184	Southern Ocean Mariculture	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 085512 7349	184	Southern Ocean Mariculture	2025-05-13	Email	In	Noted we had reached Ocean Road Abalone (Southern Ocean Mariculture), not Great Ocean Road Abalone.	No objection or claim of adverse impact.	N/A
2025 0513 085948 3717	184	Southern Ocean Mariculture	2025-05-13	Email	Out	Passed on thanks for clarifying the correct entity. Advised we would update records accordingly. Noted that Southern Oceans Mariculture is invited to consult.	N/A	N/A
2025 0519 142911 2895	184	Southern Ocean Mariculture	2025-05-13	Email	In	Confirmed trading name as Ocean Road Abalone	N/A	N/A
2025 0530 112556 7365	184	Southern Ocean Mariculture	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	184	Southern Ocean Mariculture	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 152702 7256	341	Southern Rock Lobster Limited	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	341	Southern Rock Lobster Limited	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	341	Southern Rock Lobster Limited	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0516 154915 2476	342	Southern Shark Industry Alliance (SSIA)	2025-05-16	Email	Out	Bulk mailout #1, and all subsequent correspondence sent via SETFIA. See SETFIA summary.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 16 May 2025 and no request for additional time has been received.								
2025 0512 162858 5804	575	Trinsand Fisheries Pty Ltd	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 125229 8462	575	Trinsand Fisheries Pty Ltd	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0811 153033 5160	575	Trinsand Fisheries Pty Ltd	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0516 145149 3163	382	Tuna Australia	2025-05-16	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0523 095936 7806	382	Tuna Australia	2025-05-23	Email	In	Noted they will start consultation with members next week.	N/A	N/A
2025 0526 084734 5572	382	Tuna Australia	2025-05-23	Email	Out	Passed on thanks.	N/A	N/A
2025 0530 144826 5163	382	Tuna Australia	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0620 102153 1633	382	Tuna Australia	2025-06-20	Email	In	Noted the three tuna fisheries relevant to these activities as being the Eastern Tuna and Billfish (ETBF), the Southern Bluefin Tuna Fishery (SBTF) and the Australian Skipjack Fishery (east) (ASF) Noted the ASF is not active in the area, but members are members of Tuna Australia and were included in consultation. Some Tuna Australia members also hold SBT fishing rights Recommended contacting ASBTIA to ensure consultation with the purse seine sector of the SBF fishery Provided an overview of eastern tuna fisheries excluding SBT Currently 79 Longline SFR holders and 83 Minor Line SFR holders in the ETBF, potentially 162 boats operating in the fishery Provided overview of TACC by species SBT Regarding SBT, noted quota managed by CCSBT who allocate TAC for Australia. 5% of that TAC is allocated to the recreational sector Longline share of SBT has grown markedly over the last 5 years All current longline SBT effort occurs on southeast coast Longline fishing for SBT generally occurs from May to October With increasing biomass and general easterly shift of stock early in the season, effort will likely increase in both longline and minor line. Young adult SBT likely to be prevalent in the operations area. Longliners have increased effort and local port usage off Tasmania, Portland and the Bass Strait, with Portland now one of the primary ports for SBT fishers. Consultation Tuna Australia engaged with all concession holders in the ETBF and permit holders in the ASF (east) There was a 100% delivery rate and a relatively high engagement rate with the material provided. The relatively small number of responses suggested the proposal was not controversial. Concerns raised	No objection or claim of adverse impact. Reasonable concerns raised regarding: 1) Potential exclusion zones/spatial conflict - per Event ID 2025 0721 110532 7349, noted limited risk and view that best managed through good communications. 2) Cumulative impact – per Event ID 2025 0721 110532 7349 responded on these concerns, noting discrete nature of activities and limited impact on long line operations. Reasonable request made for notifications; agreed on variation to notifications as per Event ID 2025 0721 110532 7349 and 2025 0722 111345 1840	Sections 5.1.1.3 and 5.1.1.6 of the Description of the Environment updated to reflect data provided. Agreed notifications to be provided. Annie-2 EP stakeholder notifications register updated accordingly.

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						Potential spatial conflict, noting exclusion zones, support vessels and infrastructure But also noted this would not significantly hinder longline operations, particularly considering location and water depths Advance notice and 48-hour lookaheads are suggested to limit potential spatial conflicts Several concession holders raised concerns about cumulative impact noting multiple exploration proposals. While noting the project was considered relatively low risk, particularly considering pelagic nature of the fishing operations, noted concerns about concurrent and future activities of other oil and gas exploration activities in the area. Noted that adequate commentary was provided by Amplitude Energy about risks and mitigations in respect of these projects Need to also consider cumulative impacts of energy exploitation in the Otway Basin beyond that of Amplitude Energy Welcomed further dialogue to deconflict any possible issues before they arise.		
2025 0721 110532 7349	382	Tuna Australia	2025-07-21	Email	Out	Passed on thanks for the comprehensive consultation report. Noted that no specific objections or claims of adverse impacts are raised, but acknowledged the request for notifications and general concerns by some fishers regarding cumulative impacts. Consultation Appreciated that information was shared with all concession and permit holders within the Eastern Tuna and Billfish Fishery and the Australian Skipjack Fishery, and agreed the rate of engagement with the material was good. Also agreed with their conclusion that response levels were low due to the nature and scale of the activities, noting we also saw generally low levels of response compared with some other activities in the region. Confirmed we have consulted directly with ASBTIA in regards these proposed activities. Navigation and Deconflicting with fishing operations Agreed the best approach to avoiding conflict is through good communications and confirm that we will provide at least 72-hours' notice ahead of any activity commencing under these EPs. Committed to also provide notification after completion of any activities carried out under these EPs. Given the nature of the activities covered by the EPs, considered that the 48-hour look ahead is probably not so beneficial (as it might be for seismic operations where the vessel is moving faster and covering larger areas) due to the limited spatial extent and sequential nature of each activity. For example, for wells connection activities, there is between 5-10 km of flowline laying (slow moving vessel) for each manifold (refer Figure below excerpted from the published approved OPP). Similarly, vessels operating	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						for inspection, maintenance and repair works move slowly over areas of infrastructure. Noted that for the drilling Annie-2 development well, the drilling unit operates in a static location for up to 60 days. For any survey activities, vessels have reasonable manoeuvrability and will work in well-defined areas of limited spatial extent. Cumulative impacts Noted general concerns about cumulative impacts of exploration and energy exploitation in the Otway Basin. These are discussed further below. Development drilling and well connection activities Noted some members raised general concerns about cumulative impacts from the ECSP activities, particularly in relation to other exploration activities proposed in the area. The suggestion that we consider an assessment of our activities in the context of other activities likely to overlap the timeframe and general area of our planned activities, and options for delaying or otherwise deconflicting concurrent activity was noted. Considered that best way to ensure no temporal overlap of drilling activities was through the use of a common drilling rig amongst petroleum operators planning relevant activities in the area. This step has already been taken, and the reasonably foreseeable drilling activities will be carried out using one mobile offshore drilling unit (MODU) in a sequential manner, so the spatial impact at any time is limited from a drilling perspective. Similarly, there are few pipelaying vessels available in the market, so it is unlikely that concurrent pipelaying would occur. The potential for a seismic data acquisition campaign to overlap temporally with drilling or pipelaying activities remains, but our activity footprint is small compared to that of the seismic data acquisition footprint, so the contribution is limited. However, while we cannot speak on behalf of a seismic data acquisition operator, from a practical viewpoint seismic data acquisition is unlikely to occur concurrently with drilling or pipelaying activities in the same area as that would require working around the vessels and leaving a significant gap in the data acquired. Our EP does consider cumulative impacts of our activities and concludes that they are unlikely to have a discernible cumulative impact on commercial fisheries when considered alongside other reasonably known energy related activities such as seismic data acquisition or renewal energy activities, and that our activities will not have a substantial adverse effect on the sustainability of a commercial fishery. Any impacts from the rig, pipe-laying vessel or support vessels will be of a relatively short-term duration and a relatively low footprint compared with some other proposed energy related activities, and as you have noted our resulting infrastructure does not substantially hinder long line fishing that is pelagic in nature. Interaction with Energy Exploitation Activities		

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						We note you have suggested further dialogue in the context of cumulative impacts of energy exploitation activities in the Otway Basin. With respect to the ECSP EPs, these comprise discrete activities during the life of the EPs, the longest being the wells connection activities of up to 120 days (this assumes that the vessel has to travel to & from Port for flowline reels and weather downtime). However, spatially each activity impacts a relatively small area (greatest length of flowline tieback is approx. 10km) in terms of how it could affect long-line fishing, and only the PSZ around the Annie-2 well presents a longer-term impact to access. Based on the rig sequencing, we have assessed it unlikely that the drilling activity will have discernible cumulative impact. We recognise the increasing number of offshore proponents consulting in the area, particularly with the release of offshore wind acreage, and this is something we are considering as part of our longer-term development planning. We addressed this firstly in our East Coast Supply Project Offshore Project Proposal (OPP), which considers what a holistic Otway development could look like following exploration success. We previously consulted with you on the OPP, which has recently been accepted by NOPSEMA, and can be found on NOPSEMA's site here: **Offshore project proposals | NOPSEMA**. The cumulative impact assessment can be found in Section 11 on page 788. Measures adopted or confirmed • We have checked information you provided in the "background" section and confirm that it is consistent with the description of environment for these EPs; • We have reviewed the information provided on the "current activity" of the relevant fisheries. It has provided useful confirmation of our understanding of the tuna fisheries, consistent with that provided last year, and confirms information contained within the "description of the environment". • We will provide 72-hour advance notifications and completion notifications as described above, and/or other notifications as otherwise agreed; and • We confirm that reasonably foreseeable Otway drilling activities are part of a rig-share consortium such that various proposals using the drilling rig will be sequential using the one rig, not concurrent. Noted our appreciation of the effort taken to reach all concession and permit holders in both fisheries, and in preparing a thorough report. Considered this closed out any current concerns regarding proposed activities under the 2 ECSP EPs, but requested they advise if there were any further queries or concerns.		
2025 0722 111345 1840	382	Tuna Australia	2025-07-22	Email	In	Noted that the 48-hour look-ahead was a general request, but confirmed 72 hour notice was more than adequate based on nature of our operations.	No objection or claim of adverse impact.	Agreed on method for notifications.

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
								Annie-2 EP stakeholder notifications register updated accordingly.
2025 0722 120340 1235	382	Tuna Australia	2025-07-22	Email	Out	Passed on thanks for quick response, and advised to get in touch if any further queries.	N/A	N/A
2025 0811 153233 5138	382	Tuna Australia	2025-08-04	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing Requested it be shared with members.	N/A	N/A
2025 0812 081329 7464	382	Tuna Australia	2025-08-12	Email	In	Confirmed the update was sent to members, and noted a change of personnel within Tuna Australia.	No objection or claim of adverse impact.	N/A
2025 0813 120055 7054	382	Tuna Australia	2025-08-06	Email	Out	Passed on thanks, and queried where based.	N/A	N/A
2025 0813 120113 4171	382	Tuna Australia	2025-08-13	Email	In	Noted based in Brisbane, and staff are based in different states.	No objection or claim of adverse impact.	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 16 May 2025 and no request for additional time has been received.								
2025 0512 152901 9820	411	Western Abalone Divers Association	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Noted we were also consulting via SIV	N/A	N/A
2025 0530 112556 7365	411	Western Abalone Divers Association	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	411	Western Abalone Divers Association	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
Interest groups								
2025 0519 133947 7349	3	3280-3284 Warrnambool Beach Patrol	2025-05-19	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 143518 5003	3	3280-3284 Warrnambool Beach Patrol	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0604 111019 2484	3	3280-3284 Warrnambool Beach Patrol	2025-06-04	Email	In	Advised intention to attend Warrnambool drop-in session. Noted the Minerva type plastic saddle clamps won't be used on our flowlines. Requested information as to how the pipes are secured to the seabed. Requested confirmation as to whether we will be installing concrete mattresses for the ECSP: Wells Connection project similar to that of nearby operators. Noted that plastics is not listed as a key potential impact of the ECSP EPs, and expressed interest in getting a full list of plastics that will be used, and details on related risk assessments and mitigations. Would also like to know the brands of bulk drink bottles that will be consumed ion the vessels.	No objection or claim of adverse impact. Reasonable request for information on other EP (provided). Reasonable request for additional information on plastics responded to in Event ID 2025 0611 154748 9024,	Will share a list of bulk drink bottle brands to be used upon mobilising of vessels for the proposed activities. See Event ID 2025 0611 154748 9024, Annie-2 EP stakeholder notifications register updated accordingly.
2025 0611 120023 7790	3	3280-3284 Warrnambool Beach Patrol	2025-06-04	Email	Out	Passed on thanks for email. Confirmed presence at the Warrnambool drop-in sessions, and suggested we could go over queries then. Enquired as to which session was likely to be attended.	N/A	N/A
2025 0611 120037 2543	3	3280-3284 Warrnambool Beach Patrol	2025-06-05	Email	In	Indicated likely time to attend the drop-in session, asking if one-on-one chats were available. Noted limited time available.	No objection or claim of adverse impact.	N/A
2025 0611 120022 4577	3	3280-3284 Warrnambool Beach Patrol	2025-06-05	Email	Out	Confirmed setup allows for one-on-one chats, and looked forward to the meeting.	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0605 141549 4254	3	3280-3284 Warrnambool Beach Patrol	2025-06-05	Drop-in session	In	Requested project updates.	No objection or claim of adverse impact. Reasonable request for project updates agreed.	Annie-2 EP stakeholder notifications register updated accordingly.
2025 0611 154748 9024	3	3280-3284 Warrnambool Beach Patrol	2025-06-11	Email	Out	Passed on appreciation for meeting during our community drop-in sessions. We discussed your queries below when we met, and I have summarised our responses as follows: 1. How our pipes/flowlines (and umbilicals) are secured to the sea floor -These are held to the sea floor by their own weight, augmented by regularly spaced overlaid concrete mattresses. 2. Will concrete mattresses be used? -Yes, they are spaced regularly during pipelaying, and additional mattresses may be laid as a result of ongoing inspection work during the life of the operations if needed -for example if any instability or scouring is noted on inspection 3. Plastics were not noted as a key potential impact on our information sheets -Plastics are considered in our environment plans and are assessed under risk impacts associated with loss of materials overboard. As mentioned when we met, through the implementation of the environment plans and assurance against these, Amplitude work closely with the vessel contractors to have no unplanned release of waste/objects to the marine environment. If this occurs it is reported to NOPSEMA and investigated by Amplitude, and if possible the waste/ objects retrieved. 4. Full list of plastics to be used -Plastics are in widespread use across all aspects of operations, so the provision of a full list of where all plastics are used would be quite difficult to provide. As we discussed, more relevant is the release of plastics or any equipment or objects into the marine environment. As one of our staff members outlined during the drop-in session, in spite of the mitigations in place, the dropping of objects, for example, can occasionally happen, and are recordable or reportable incidents in our heavily regulated industry. We would be happy to advise you of any such instances occurring so there are no surprises for your team 5. Bulk drink bottle brands -We do try to limit these types of plastic consumables, but as discussed during the drop-in sessions, would be happy to share a list upon mobilising of vessels for the proposed activities. We also committed to following up on your query related to the blue plastic twine that washed up both recently, and during 2023 (coinciding with timing of another operator's offshore activities). If you could share the photos, we will follow up to try to determine a possible source, and whether it is something we need to consider during our activities. It was considered this covered the queries and discussions, but requested confirmation in case of any corrections or omissions.	N/A	N/A
2025 0611 171332 8764	3	3280-3284 Warrnambool Beach Patrol	2025-06-11	Email	In	Passed on thanks for the response, and shared images of the twine that had been found on the beaches. Noted that another operator had shown images of twine in their old concrete lined pipelines.	No objection or claim of adverse impact. (Discussion related to wells connection EP and another operator's activities.	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0612 115531 1795	3	3280-3284 Warrnambool Beach Patrol	2025-06-12	Email	Out	Passed on thanks for the images, and advised we couldn't be certain where that comes from. Sent images of typical mattresses, and while they used a form of twine, they were much thicker than those found on the beaches. Noted our engineers did not consider that the twine would break free in the same manner as those washed ashore. As such we did not envisage such risk from our mattresses. We noted that similar polypropylene is used in our umbilicals and sent an image of a cutaway umbilical section. This showed how the twine was fully encapsulated in the outer sleeve, so again, it was a highly unlikely source of any twine washed ashore. Offered to collect any similar material found in future for assessment to determine if it could have resulted from any of our activities.	N/A	N/A
2025 0811 154314 8130	3	3280-3284 Warrnambool Beach Patrol	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 19 May 2025 and no request for additional time has been received.								
Interest group 25(1)(d)								
2025 0512 163930 1957	18	Apollo Bay Landcare	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	18	Apollo Bay Landcare	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	18	Apollo Bay Landcare	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 164113 9994	20	Apollo Bay Sailing Club	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	20	Apollo Bay Sailing Club	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	20	Apollo Bay Sailing Club	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 164250 7085	22	Apollo Bay Surf Lifesaving Club	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	22	Apollo Bay Surf Lifesaving Club	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	22	Apollo Bay Surf Lifesaving Club	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0513 125524 3041	463	AusOcean	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0530 143034 7086	463	AusOcean	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 154501 6482	463	AusOcean	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0512 164522 1141	28	Australian Coastal Society Victorian Chapter	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 125315 5404	28	Australian Coastal Society Victorian Chapter	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 154611 3540	28	Australian Coastal Society Victorian Chapter	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 164901 6176	30	Australian Conservation Foundation	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	30	Australian Conservation Foundation	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	30	Australian Conservation Foundation	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0512 165023 1900	32	Australian Marine Conservation Society	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	32	Australian Marine Conservation Society	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	32	Australian Marine Conservation Society	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0612 150917 7349	669	Citizen Scientists - Southern Right Whales	2025-06-5	Drop-in session	In	Expressed a strong interest in Southern Right Whales, and highlighted how they captured and uploaded photos to a public domain site.	No objection or claim of adverse impact.	N/A
2025 0612 150917 7349	669	Citizen Scientists - Southern Right Whales	2025-06-12	Email	Out	Passed on Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4). Noted that while they attended thinking the drop-in session was related to offshore wind, we considered them relevant persons given their strong interest in conservation of southern right whales. Noted how they upload their photos to the whaleface site 9where we also now send ours). Noted that we appreciated them sharing the great photos they had gathered over a period of time, and offered to share our historical and future sightings data. They were pleased to accept this offer. As per our commitment made during the session, we attached our historical sightings data with this follow up email.	N/A	Provided historical marine mammal observations.
2025 0623 112826 7349	669	Citizen Scientists - Southern Right Whales	2025-06-23	Email	Out	Shared sightings data from recent survey as per commitment made when met during drop-in session.	N/A	N/A
2025 0806 141549 4254	669	Citizen Scientists - Southern Right Whales	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	669	Citizen Scientists - Southern Right Whales	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 June 2025 and no request for additional time has been received.								
2025 0512 165209 1927	147	Environment Victoria	2025-05-12	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 125404 4864	147	Environment Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 154738 6211	147	Environment Victoria	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 12 May 2025 and no request for additional time has been received.								
2025 0513 074520 3560	153	Fight for the Bight Port Fairy	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 085013 3929	153	Fight for the Bight Port Fairy	2025-05-13	Email	In	Email bounced	N/A	N/A
2025 0513 090911 7972	153	Fight for the Bight Port Fairy	2025-05-13	Email	Out	Noted usual email address bounced. Re-sent Bulk mailout #1 to alternate address. (No bounce)	N/A	N/A
2025 0517 035112 4663	153	Fight for the Bight Port Fairy	2025-05-17	Email	In	Final failure message from first email address used (2nd address was OK)	N/A	N/A
2025 0530 143728 2535	153	Fight for the Bight Port Fairy	2025-05-30	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0609 082429 5038	153	Fight for the Bight Port Fairy	2025-06-08	Email	In	Suggested a general catchup and discussion on gas.	N/A	N/A
2025 0609 083617 3606	153	Fight for the Bight Port Fairy	2025-06-09	Email	Out	Provided suggested times.	N/A	N/A
2025 0610 082857 9586	153	Fight for the Bight Port Fairy	2025-06-09	Email	In	Enquired as to suggested format for the meeting.	N/A	N/A
2025 0610 083041 9639	153	Fight for the Bight Port Fairy	2025-06-10	Email	Out	Suggested phone call should work, and interested as to whether interested in project specific discussion, or more broad.	N/A	N/A
2025 0610 084737 8059	153	Fight for the Bight Port Fairy	2025-06-10	Email	In	Confirmed a call was fine.	N/A	N/A
2025 0613 103555 6215	153	Fight for the Bight Port Fairy	2025-06-13	Call	Out	No issues raised regarding proposed activities. General discussion around gas market and renewables.	N/A	N/A
2025 0811 154846 7095	153	Fight for the Bight Port Fairy	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 105541 7846	166	Friends of Bay of Islands Coastal Park	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	166	Friends of Bay of Islands Coastal Park	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	166	Friends of Bay of Islands Coastal Park	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0513 120242 8330	167	Friends of the Earth - Melbourne	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	167	Friends of the Earth - Melbourne	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	167	Friends of the Earth - Melbourne	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 125604 7256	467	Game Fishing Association of Victoria	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	467	Game Fishing Association of Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	467	Game Fishing Association of Victoria	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 120413 7381	189	Greenpeace	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 121020 2709	189	Greenpeace	2025-05-13	Email	In	Auto reply	N/A	N/A
2025 0530 112556 7365	189	Greenpeace	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0530 112931 1126	189	Greenpeace	2025-05-30	Email	In	Auto reply	N/A	N/A
2025 0806 141549 4254	189	Greenpeace	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
2025 0806 141716 5800	189	Greenpeace	2025-08-06	Email	In	Auto reply	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 120503 1408	197	International Fund for Animal Welfare (IFAW)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	197	International Fund for Animal Welfare (IFAW)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	197	International Fund for Animal Welfare (IFAW)	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 120625 4726	220	Life Saving Victoria	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	220	Life Saving Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	220	Life Saving Victoria	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								

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2025 0513 120712 8763	227	Marine Mammal Foundation	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	227	Marine Mammal Foundation	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	227	Marine Mammal Foundation	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 132533 1957	586	No Offshore Windfarm Zone - Warrnambool and District	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 141808 7085	586	No Offshore Windfarm Zone - Warrnambool and District	2025-05-13	Email	In	Passed on thanks for email and noted they will respond soon. Requested clarity as to whether seismic data acquisition was involved with any of the proposed activities.	N/A	N/A
2025 0513 141957 1141	586	No Offshore Windfarm Zone - Warrnambool and District	2025-05-13	Email	Out	Confirmed no seismic data acquisition will be undertaken under these EPs.	N/A	N/A
2025 0519 131815 7787	586	No Offshore Windfarm Zone - Warrnambool and District	2025-05-15	Email	In	Provided the following feedback on behalf of the network: Passed on thanks for the opportunity to provide feedback. The precautionary principle should guide risk management for potential impacts such as underwater noise, vessel activity, and seabed disturbance, particularly in relation to: 1. The Logans Beach Whale Nursery. 2. Migration, breeding, and feeding areas of marine mammals in the Southern Ocean. 3. Biologically Important Areas (BIAs) and Habitats Critical to the Survival (HCTS) of the endangered Southern Right Whale. 4. The migration routes of short-finned eels to and from the Coral Sea. The National Recovery Plan for the Southern Right Whale (effective 31 July 2024 under the EPBC Act) highlights the importance of applying the precautionary principle in protecting the species, which is also emphasized here. It is understood that neither of the two Environmental Plans (EPs) propose seismic data acquisition. If this changes, immediate notification is requested. The involvement of First Nations groups in consultation should be ensured if they wish to contribute. Finally, ongoing updates are requested, especially regarding future consultation opportunities.	N/A	N/A
2025 0530 142206 3313	586	No Offshore Windfarm Zone - Warrnambool and District	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars. Noted that we will revert soon on outstanding queries, and offered to meet while in Warrnambool.	N/A	N/A
2025 0606 115344 1967	586	No Offshore Windfarm Zone - Warrnambool and District	2025-06-04	Email	Out	Passed on thanks for feedback. Provided following responses to queries: Application of the precautionary principle The Precautionary Principle (as a component of Ecologically sustainable development) is something that we must and do apply as part of our OPP and EP development, under the OPGGS (Environment) Regulations. The	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						regulator will not accept our plans unless we can demonstrate that we will do our activities not out-with the principles of ESD. To ensure we take appropriate levels of precaution we start by defining our project and potential impact areas, and then undertake EPBC Act protected matters searches. We then review the list of matters and all relevant conservation advice, for every listed species, including the southern right whale recovery plan issued in 2024. We take this advice into account, including the key threats the advice highlight (this might be subsea noise, vessel strike or marine debris for example) to understand the sensitivity of each component of the environment relative to the activities we are undertaking. In our case the main elements of the project which introduce stressors, and which you've started to allude to in your email, are temporary use of vessels, and installing equipment on the seabed. We evaluate the options to either avoid impacts and risks associated with those stressors, or otherwise manage them to acceptable levels, and to as low as reasonably practicable (ALARP). EPBC Act conservations advice and recovery plans also inform what an acceptable level is. Our OPP and EPs demonstrate how we will meet or beat acceptable levels of impact. Then within our EPs we go a step further in our impact and risk reduction efforts by applying the ALARP principle, and reducing impacts and risks to the lowest practicable level. We have applied this standard process while developing the OPP (**OPP - East Coast Supply Project - Rev 2 - December 2024.pdf**). The Environment Plans for proposed the East Coast Supply Project activities, which are in preparation include evaluations for underwater sound (impulsive and continuous), physical presence and seabed disturbance. The OPP evaluates that the East Coast Supply Project is consistent with the precautionary principle (refer to Tables 8-13, 8-33 and 9-9 in the OPP link provided above), and for each of these aspects (with the implementation of control measures) because: The highest ranking consequences and risks did not result in serious or irreversible environmental damage Potential impacts and risks were well-understood, we have confidence that the management measures we have proposed will manage the residual impacts and risks, and both our plans and our performance are closely regulated in Australian waters. The evaluations considered Logans Beach, Southern Right Whale BIAs and HCTS and migration of short-finned eels. Of note: Logans beach is ~24km from the operational area of the OPP (these activities are undertaken within this area). We have commissioned subsea noise modelling by subsea acoustics specialists and scenarios and at no point do our activities result in levels of noise which will disturb whales within the Logans Beach reserve. There are no overlaps with behavioural disturbance (noise associated) contours from activity vessels There is potential that some infrequent vessel activities could result in behavioural disturbance thresholds for noise being exceeded just inside southern right whale HCTS, though not within the shallower preferred calving and nursing habitat. EPOs and control measures have been		

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						developed to ensure that the risk of behavioural disturbance to southern right whales inside BIA's and HTCS, is minimised. The behavioural reaction by eels to subsea noise has been assessed to be minor and local (i.e. if the eels are swimming within tens of metres of the activities) and we have no large electromagnetic fields associated with our project which might influence migration behaviour. We confirm that the objectives, actions and measures described within the OPP, and the activity specific Environment Plans are consistent with the objectives and actions of the 2024 SRW national recovery plan. No seismic data acquisition is contemplated under the OPP or either of these EPs. Should that change, we would necessarily re-consult with all relevant persons, including your organisation. We appreciate and agree with the view that relevant First Nations groups should be consulted, and confirm that we have invited the three closest Registered Aboriginal Parties (RAPs) to consult on these activities. Confirmed we will keep the organisation updated on these activities, and will invite your comment on future EPs in the offshore Otway Basin.		
2025 0605 133757 8883	586	No Offshore Windfarm Zone - Warrnambool and District	2025-06-05	Email	In	Passed on thanks for response. Advised unable to meet during drop-in sessions.	N/A	N/A
2025 0811 155713 6443	586	No Offshore Windfarm Zone - Warrnambool and District	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
2025 0812 135559 2414	586	No Offshore Windfarm Zone - Warrnambool and District	2025-08-12	Email	In	Noted there was no further input at this time.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 120804 8114	262	Ocean Racing Club of Victoria	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	262	Ocean Racing Club of Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	262	Ocean Racing Club of Victoria	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 120841 4361	263	Ocean Watch	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0514 165305 6558	263	Ocean Watch	2025-05-14	Email	In	Limited resources and unable to respond.	N/A	N/A
2025 0519 133433 8628	263	Ocean Watch	2025-05-19	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 144510 1525	263	Ocean Watch	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 190437 4259	263	Ocean Watch	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 120954 9657	266	Otway Climate Emergency Action Network (OCEAN)	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	266	Otway Climate Emergency Action Network (OCEAN)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	266	Otway Climate Emergency Action Network (OCEAN)	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 121056 8843	271	Paddle Victoria	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	271	Paddle Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	271	Paddle Victoria	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 121310 1506	273	Peterborough Golf Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 121758 9546	273	Peterborough Golf Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) Sent to alternate email address	N/A	N/A
2025 0530 125624 4256	273	Peterborough Golf Club	2025-05-30	Email	In	Advised via quick response table: Do not wish to be consulted further	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 132733 9994	281	Port Campbell Community Group	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	281	Port Campbell Community Group	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	281	Port Campbell Community Group	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 122443 4276	285	Port Campbell Rifle Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	285	Port Campbell Rifle Club	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	285	Port Campbell Rifle Club	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 122718 5723	286	Port Campbell Surf Life Saving Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0530 112556 7365	286	Port Campbell Surf Life Saving Club	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	286	Port Campbell Surf Life Saving Club	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 125818 3195	470	Port Fairy Angling Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	470	Port Fairy Angling Club	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	470	Port Fairy Angling Club	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 122813 7904	289	Port Fairy Yacht Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	289	Port Fairy Yacht Club	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	289	Port Fairy Yacht Club	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0606 115735 1643	718	Protect the West	2025-06-06	Email	In	Registered for webinar for 9 June 2025. Initially contacted us as a result of advertisement in regional press.	N/A	N/A
2025 0625 095132 7349	718	Protect the West	2025-06-25	Email	Out	Passed on thanks for joining the webinar on Friday 20 June; appreciated the interest and time, and the opportunity to learn a little about the organisation's interests. Noted they were primarily concerned with major expansion of long-life oil and/or gas projects such as the recently announced extension to the NW Shelf project. Advised as promised that we had now uploaded a pre-recorded version of the webinar, and provided the link: **ECSP: Annie-2 development well**. Noted the webinar could be found under the drop-in sessions table on that page, or on the **ECSP: Wells connection EP** page. Noted we also added Protect the West as a â€œRelevant Personâ€ with respect to consultation on our environment plans, with you as the primary contact. Requested advice if there was a different preference. Provided a copy of the general mailout sent to other relevant persons. (Bulk mailout #1)	N/A	N/A
2025 0811 190737 9169	718	Protect the West	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 6 June 2025 and no request for additional time has been received.								

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0513 130332 5804	576	Relevant Person ID 576	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 143428 5800	576	Relevant Person ID 576	2025-05-13	Email	In	Requested to opt out of any further consultation on Amplitude Energy projects.	N/A	N/A
2025 0519 142939 5418	576	Relevant Person ID 576	2025-05-13	Email	Out	Acknowledged request to opt out of consultation.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 122907 1481	322	SCUBA Divers Federation of Victoria	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	322	SCUBA Divers Federation of Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	322	SCUBA Divers Federation of Victoria	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 122947 6332	325	Sea Shepherd Australia	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	325	Sea Shepherd Australia	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	325	Sea Shepherd Australia	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 123035 5218	352	Surfers for Climate	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	352	Surfers for Climate	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	352	Surfers for Climate	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 123113 3683	354	Surfrider Foundation Australia	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	354	Surfrider Foundation Australia	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	354	Surfrider Foundation Australia	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 123208 6604	389	Victoria Game Fishing Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	389	Victoria Game Fishing Club	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	389	Victoria Game Fishing Club	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0515 154003 7349	394	Victorian Recreational Fishing Peak Body (VRFish)	2025-05-15	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4). Noted previous feedback received during consultation on the OPP will be considered in developing these two EPs.	N/A	N/A
2025 0530 112556 7365	394	Victorian Recreational Fishing Peak Body (VRFish)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0606 115402 6302	394	Victorian Recreational Fishing Peak Body (VRFish)	2025-06-06	Email	In	Passed on thanks for the information, and intends to get in touch when back from leave.	N/A	N/A
2025 0606 115553 7815	394	Victorian Recreational Fishing Peak Body (VRFish)	2025-06-06	Email	Out	Passed on thanks for the email.	N/A	N/A
2025 0806 141549 4254	394	Victorian Recreational Fishing Peak Body (VRFish)	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 15 May 2025 and no request for additional time has been received.								
2025 0513 124723 6830	402	Warrnambool Coastcare Landcare Network	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 125458 9376	402	Warrnambool Coastcare Landcare Network	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0811 190953 8755	402	Warrnambool Coastcare Landcare Network	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 125740 9820	469	Warrnambool Offshore & Light GFC	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	469	Warrnambool Offshore & Light GFC	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	469	Warrnambool Offshore & Light GFC	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 124907 3374	404	Warrnambool Surf Life Saving Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	404	Warrnambool Surf Life Saving Club	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	404	Warrnambool Surf Life Saving Club	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 124956 3514	407	Warrnambool Yacht Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 143400 7349	407	Warrnambool Yacht Club	2025-05-13	Email	In	Responded via quick response table No need for further consultation on this project, but would like project updates.	No objection or claim of adverse impact.	No further consultation on this project, but will consult on relevant future

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						In future would like to be consulted on all activities other than Decommissioning.	Reasonable request made related to future consultation preferences agreed as per Event ID2025 0513 192210 7349.	decommissioning. See 2025 0513 192210 7349
2025 0513 192210 7349	407	Warrnambool Yacht Club	2025-05-13	Email	Out	Passed on thanks for quick response. Confirmed that we will: Cease consultation emails on this project, but send you project updates Consult with you in future on all other activities other than any relevant decommissioning.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 125055 8468	412	Whale and Dolphin Conservation Australia	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	412	Whale and Dolphin Conservation Australia	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	412	Whale and Dolphin Conservation Australia	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 125202 8421	413	Wilderness Society Melbourne	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	413	Wilderness Society Melbourne	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	413	Wilderness Society Melbourne	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 125245 6302	418	Windsurfing Victoria	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	418	Windsurfing Victoria	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	418	Windsurfing Victoria	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 125315 9874	423	World Wildlife Fund	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 125350 6450	423	World Wildlife Fund	2025-05-13	Email	In	Auto reply	N/A	N/A
2025 0530 112556 7365	423	World Wildlife Fund	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	423	World Wildlife Fund	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 125434 9198	425	Wye River Surf Life Saving Club	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0530 112556 7365	425	Wye River Surf Life Saving Club	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0806 141549 4254	425	Wye River Surf Life Saving Club	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
Local government and elected officials 25(1)(d)								
2025 0513 161510 9657	79	Colac Otway Shire	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4) It was noted that based on previous advice, shire council only wish to be consulted on seismic data acquisition activities. The proposed activities do not include any seismic, so we are sending this for information purposes only.	N/A	N/A
2025 0522 112443 6127	79	Colac Otway Shire	2025-05-21	Email	In	Passed on thanks for contacting the shire regarding the 2 ECSP EPs. Noted that as there is no seismic involved, would just like to receive project updates. Noted via quick response table: Do not need to be consulted further on these two projects Would still like to receive project updates Only wish to be consulted on any seismic projects.	No objection or claim of adverse impact. Reasonable request for project updates, and noted consultation only required in future for any relevant seismic data acquisition projects – responded to in Event ID 2025 0522 191812 8209.	Confirmed we would provide project updates, and that no seismic was to be acquired under this EP. Event ID 2025 0522 191812 8209, Annie-2 EP stakeholder notifications register updated accordingly.
2025 0522 191812 8209	79	Colac Otway Shire	2025-05-22	Email	Out	Passed on thanks for response, and confirmed we will continue to provide project updates as requested. Confirmed no seismic data acquisition being planned under either of these two EPs.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 162028 8843	86	Corangamite Shire Council	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4). Noted from our most recent meeting that council does not need to be consulted on these activities, so sharing for information purposes.	N/A	N/A
2025 0514 120411 7349	86	Corangamite Shire Council	2025-05-14	Email	In	Response via quick response table: No further consultation required on these projects Would still like to receive project updates.	No objection or claim of adverse impact. Reasonable request to receive project updates confirmed in Event ID 2025 0514 120523 5800	Will provide project updates as per event ID 2025 0514 120523 5800. Annie-2 EP stakeholder notifications register updated accordingly.
2025 0514 120523 5800	86	Corangamite Shire Council	2025-05-14	Email	Out	Passed on thanks.	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0515 155818 5800	177	Glenelg Shire Council (Portland)	2025-05-15	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0530 112556 7365	177	Glenelg Shire Council (Portland)	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0806 141549 4254	177	Glenelg Shire Council (Portland)	2025-08-06	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 15 May 2025 and no request for additional time has been received.								
2025 0513 072817 2952	243	Moyne Shire Council	2025-05-13	Email	In	Noted that one of the shire"s caravan parks had received our invitation to consult, and was checking as to whether we had also been in direct touch with Moyne Shire Council.	N/A	N/A
2025 0513 073114 5138	243	Moyne Shire Council	2025-05-13	Email	Out	Passed on thanks for the email, and noted Moyne"s direct email would go out later in the day.	N/A	N/A
2025 0513 073703 8477	243	Moyne Shire Council	2025-05-13	Email	In	Provided a direct email address.	N/A	N/A
2025 0513 094353 1126	243	Moyne Shire Council	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0513 094417 9410	243	Moyne Shire Council	2025-05-13	Email	Out	Auto response	N/A	N/A
2025 0513 095930 5671	243	Moyne Shire Council	2025-05-13	Email	In	Asked to remove the following businesses from our relevant persons list as they are owned by Moyne Shire Council (that we are consulting directly with): The Gardens, Southcombe Park, Killarney and Yambuk Caravan Parks.	N/A	N/A
2025 0530 144244 4224	243	Moyne Shire Council	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars	N/A	N/A
2025 0530 144312 7717	243	Moyne Shire Council	2025-05-30	Email	Out	Auto reply	N/A	N/A
2025 0811 191323 9239	243	Moyne Shire Council	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
2025 0811 191353 9790	243	Moyne Shire Council	2025-08-11	Email	In	auto reply	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								
2025 0513 163045 9546	401	Warrnambool City Council	2025-05-13	Email	Out	Bulk mailout #1 – initial invitation to comment, with information sheet (see full summary in EP Table 11-4)	N/A	N/A
2025 0516 105323 9211	401	Warrnambool City Council	2025-05-16	Email	Out	Responded via quick response table: Provide information on: Cetaceans (migration paths) and *Eudyptula minor* Little Penguins Provide information on: requirements/needs of Warrnambool airport May be interested in meeting We would like to know how you manage impacts to the following species: 1. *Eubalaena australis* Southern right whale 2. *Megaptera novaengliae* Humpback whale 3. *Balaenoptera musculus* Blue Whale 4. *Eudyptula minor* Little penguin	No objection or claim of adverse impact. Reasonable request for additional information on 1) Little Penguins, and impact management on 1) Southern Right Whale 2) Humpback Whale 3) Blue Whale and 4) Little Penguin Information provided in Event ID 2025 0604 221247 8160, and offer to meet made in Event ID 2025 0530 121749 2087. Query related to use of Warrnambool Airport outside scope of EP, and responded to via separate correspondence.	Relevant requested information has been provided in Event ID 2025 0604 221247 8160,
2025 0530 121749 2087	401	Warrnambool City Council	2025-05-30	Email	Out	Bulk mailout #2 - notification of community drop-in sessions and webinars. Also advised that we were preparing a response to their earlier email, but were available to meet during the drop-in sessions in Warrnambool.	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
2025 0604 221247 8160	401	Warrnambool City Council	2025-06-04	Email	Out	Noted we were in Warrnambool next day and could meet at the drop-in sessions, or between sessions, at their convenience. Regarding queries: **Cetacean migration paths** Species such as Mink, Sei, Blue, Fin, Pygmy Right, Southern Right and Humpback whales occur in the Otway region at particular times of year, and at those times, may move through the areas we propose to work,. Further information, including their presence and timing in the region, for all of the cetacean species which are known, likely or which may occur are provided within our **Offshore Project Proposal section 6.5.8.1.** We would recommend looking at both the **South East Marine region profile** and the DCCEEW Species Profile and Threats Database - **Australian marine species pages** (within the Movement pattern sections) for more detail on any particular species. Below is an excerpt from the *Seasonality of Key Sensitivities within the Otway Basin* table within the East Coast Supply Project OPP (published here - **OPP - East Coast Supply Project - Rev 2 - December 2024.pdf**). The cetacean species listed below typically occur within the region. Some species may occur year-round, whilst some may be transient, or have a seasonal occurrence. The arrival of some species to the region is linked to physical processes such as seasonal upwellings in the region and may vary from year to year. This information is used to inform the impact and risk assessment, including the likelihood of a particular consequence eventuating. **Little Penguins** Little penguins are the smallest species of penguin, and are endemic, permanent residents on several inshore and offshore Australian and New Zealand islands. Their diet includes small school fish, squid and krill and they are listed as marine under the EPBC act. Our OPP and map below show the Foraging and breeding Biologically Important Areas (BIAs) for the little penguin that are present in the southeast, as defined by the Commonwealth government. We are also aware of the little penguin colony on middle island (Warrnambool) under close management under the Middle Island Project* We describe the rookeries and breeding colonies of the Otway region in **section 6.3.1.1 of the OPP**, and note that Breeding occurs between September and February. The figure below (excerpted from the OPP) shows the Little Penguin BIAs in proximity to the Operational Area for the East Coast Supply Project activities. **side note our environment advisor now has 2 x mini Maremma guardian dogs from the Flagstaff shop which his kids have named oddball.* **Requirements/needs of Warrnambool airport** We understand the interest in this, but being outside the scope of these EPs, our External Affairs Manager, Bindi Gove, will contact you separately to discuss further. **Managing impacts to the following species**	N/A	N/A

Event ID	Relevant Person ID	Relevant Person	Date	Event Method	In/Out	Event Summary	Assessment of Merit	Measures Adopted/Actions taken
						2,3 Southern Right, Humpback, and Blue Whales Attached is an information sheet on potential impacts to whales, including the above three species. **Little penguin** Threats to the Little Penguin include injury and mortality through vessel interaction and oil pollution, in addition to changing ocean conditions that could affect food sources and terrestrial issues such as predation. Impacts from planned operations on Little Penguins are considered unlikely given the limited nature and scale of our activities. We manage the potential stressors from the activity on little penguins and other marine life through a variety of measures including: - minimising lighting and subsea noise as far as practicable to reduce the chance of influencing animal behaviour, and - preventing the release of marine debris such as plastic, into the sea which could cause harm by ingestion. - ensuring we do not have a spill of hydrocarbons. Our entire activity, from its inception to it actually happening is planned to ensure we do not lose containment of the hydrocarbons we access and produce from offshore. Nevertheless, we do have emergency response plans in place, including tactical response plans which outline considerations for little penguins should hydrocarbons overlap with their range, and provisions for long-term monitoring studies to track the impact of a spill on marine fauna and their recovery. For more information please see **Tables 9-21 and 9-24 of the OPP**.		
2025 0811 153539 6267	401	Warrnambool City Council	2025-08-11	Email	Out	Bulk mailout #3 - notification this phase of consultation is closing	N/A	N/A
Per regulation 25(2) of the OPGGS(E)R, sufficient information has been provided as described in Section 11.3.2 of the EP. There are no requests outstanding for additional information. Per regulation 25(3) of the OPGGS(E)R, reasonable period has been provided, being more than that described in Section 11.2.4. Consultation commenced on 13 May 2025 and no request for additional time has been received.								

Table 5-2:Relevant persons consultation report – Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC)

Event ID	Date	Event Method	In/Out	Summary of each response of relevant person response, objection or claim (Reg 24(b)(i))	Amplitude Energy's assessment of merit of general assertions	*Amplitude Energy's assessment of merit of any objection or claim about the adverse impact of each activity to which the EP relates (Reg 24(b)(ii)*	*Amplitude Energy communication, or response to objection or claim (reg 24(b)(iii)) or General Response (Amplitude Energy's response to queries, comments or assertions).* *Unique reference added where needed for clarity.* *(EP references added for context as appropriate)*
2024 1203 123238 7220	2024/12-03	Email	Out				Noted wished to commence consultation on at least two other EPs that are currently in early stages of development, acknowledging the importance of early engagement with GMTOAC and the Gunditjmara people.
2024 1220 102303 6185	2024/12/20	Email	Out		None	None	**Email from NRF attaching letter.** Letter notes items related to other EPs. Notes previous requests for material to be provided in advance and requests details as to when material should be provided, and whether GMTOAC has particular concerns that Cooper Energy can seek to address in that material.
2025 0121 194346 7349	2025/01/21	Email	Out		None	None	**Email from NRF to EJA attach letter which:** Notes that Amplitude Energy would still be willing to meet in mid-March 2025, as part of ongoing engagement on this EP and in respect of 2 further environment plans (this refers to the two ECSP EP, including this Annie-2 EP). Requests confirmation as soon as possible as to the date of the proposed meeting in March, provides a copy of the GMTOAC fee schedule (as previously requested), provides information regarding the technical advice obtained by Cooper Energy and provides confirmation as to any expectations or preferences of GMTOAC for that meeting.
FN-GMTOAC-20250129-Email 2025 0129 082251 6215	2025/01/29	Email	In	Email incoming from EJA to NRF noting that EJA are seeking instructions and will aim to respond by the end of that week.	None	None	
FN-GMTOAC-20250205-Email **2025 0205 065930 7349**	2025/02/05	Email	In	Email incoming from EJA to NRF apologising for delay in response and requesting further information about additional EPs prior to responding.	None	None	
2025 0207 171021 7349	2025-02-07	Email	Out				**Email and letter from Amplitude Energy to GMTOAC** The letter: - notes Amplitude Energy has been in previous correspondence with EJA regarding consultation with GMTOAC and its members on two new EPs. - introduces two new EPs (ECSP - Annie-2 Development Well Ep and ECSP- Wells Connection EP) and notes that Amplitude Energy is reaching out for early engagement (before broader consultation commences) in line with the Consultation & Negotiation Protocol - provides 2 x consultation fact sheets which provide an overview of the proposed activities under each EP - notes that Amplitude Energy has familiarised itself with GMTOAC's published materials (where relevant) including but not

Event ID	Date	Event Method	In/Out	Summary of each response of relevant person response, objection or claim (Reg 24(b)(i))	Amplitude Energy's assessment of merit of general assertions	*Amplitude Energy's assessment of merit of any objection or claim about the adverse impact of each activity to which the EP relates (Reg 24(b)(ii)*	*Amplitude Energy communication, or response to objection or claim (reg 24(b)(iii)) or General Response (Amplitude Energy's response to queries, comments or assertions).* *Unique reference added where needed for clarity.* *(EP references added for context as appropriate)*
							limited to the Gunditjmara Sea Country Plan 2022-2033 and GMTOAC's Consultation & Negotiation Protocol - outlines the work that Amplitude Energy has already undertaken to understand the cultural values and sensitivities of GMTOAC, so they can be appropriately considered and proactively addressed in the two new EPs - lists the cultural values that Amplitude Energy understand GMTOAC to have that are relevant to the EPs, i.e. culturally significant species (whales, eels, seals, the Bonney Upwelling and Deen Maar Island; - outlines the work Amplitude Energy has already done to consider the needs and preferences of GMTOAC, so as to plan and tailor the consultation process for the 2 new EPs to the extent appropriate and reasonably practicable - requests that GMTAOC let Amplitude Energy know as soon as possible if they wish to discuss the cultural values and sensitivities or if there are any others To be aware of in the preparation of the EPs - identifies key themes and principles from the Consultation & Negotiation Protocol upon which the consultation process on the 2 new EPs can be adapted. In relation to key themes and principles from the Consultation & Negotiation Protocol: - **Early engagement** – Notes the preference expressed by GMTOAC in the Consultation & Negotiation Protocol regarding early engagement on projects, and that we have prioritised providing information to them ahead of broader consultation activities. Notes our indicative timeline for closing out consultation is 30 June 2025, which allows over 6 months for GMTOAC to consult with us. Explains that we have used this timeframe, having regard to the timeframes provided for in comparable legislative processes. Notes the steps that have been taken by GMTOAC that will hopefully make consultation on the two 2 EPs more effective and efficient. - **Initial meeting –** Notes the preference expressed by GMTOAC in the Consultation & Negotiation Protocol regarding holding an initial meeting to establish a relationship prior to commencing consultation on substantive issues. Notes that we first communicated to GMTOAC on 27.11.2024 our desire to discuss the 2 new EPs at a meeting that was proposed by GMTOAC for mid- February 2025, but this meeting was postponed until mid-March 2025. Reiterates request to meet in relation to the 2 new EPs as soon as possible, and confirms availability to attend initial meeting in mid-March. Requests that a further meeting is scheduled on the 2 new EPs, since the Consultation & Negotiation Protocol suggests that more than one meeting will be required. Requests this meeting occur no later than May 2025, to keep the process moving forward and maintain timelines. Invites GMTOAC to suggest a date and confirms that Amplitude Energy can provide further support and funding to facilitate this second meeting.

Event ID	Date	Event Method	In/Out	Summary of each response of relevant person response, objection or claim (Reg 24(b)(i))	Amplitude Energy's assessment of merit of general assertions	*Amplitude Energy's assessment of merit of any objection or claim about the adverse impact of each activity to which the EP relates (Reg 24(b)(ii)*	*Amplitude Energy communication, or response to objection or claim (reg 24(b)(iii)) or General Response (Amplitude Energy's response to queries, comments or assertions).* *Unique reference added where needed for clarity.* *(EP references added for context as appropriate)*
							- **Staggering/co-ordinating consultation** – Notes GMTOAC's suggestion in the Consultation & Negotiation Protocol that proponents may wish to stagger or co-ordinate consultation between proponents and prioritise timing for each proposal amongst them. Explains that there are real-world constraints on the ability of proponents to stagger their projects, including the reasons why they use a rig to perform back-to-back work in a region. Offers to share a meeting with GMTOAC, with Beach, if it reduces the consultation burden and allows for more timely progress of consultation process. - **Funding & support** – Notes that the Consultation & Negotiation Protocol expresses a need for funding and other support from the Proponent to engage with them on projects. Confirms that Amplitude Energy is happy to meet GMTOAC's reasonable costs arising from its participation in the consultation process for the 2 new EPs. Requests a copy of the schedule of fees referred to in the Consultation & Negotiation Protocol.i**Information** – Notes that the Consultation & Negotiation Protocol emphases the need for information to be provided to GMTOAC that is non-technical and in plain English. Notes that Amplitude Energy has familiarised itself with materials on GMTOAC's website and social media pages to get a feel for communication style and emulate it in consultation on the 2 new EPs. Notes that Amplitude Energy plans to prepare an audio presentation for GMTOAC regarding the 2 new EPs to hopefully provide information in a relatable and accessible way. Requests any further guidance or model communications that might be exemplary or instructive for preparing information on the 2 new EPs. - **Cultural value assessments** – Notes the Consultation & Negotiation Protocol states that a cultural values assessment may be required prior to commencement of consultation. Confirms that Amplitude Energy is proactively considering the cultural values and sensitivities based on GMTOAC's published material and previous consultation feedback, and that it has plans to undertake cultural heritage survey. Confirms that we will share updates about this in due course. - **Cumulative impact assessments** – Notes the Consultation & Negotiation Protocol expresses that GMTOAC may require a cumulative impact assessment to be undertaken by the Proponent for activities with a risk to impact upon Country and Sea Country. Confirms that we are currently undertaking a cumulative impact assessment in respect of the activities under the 2 new EPs, in the context of the activities of other proponents, and will share more detailed information with GMTOAC in due course, tailored to this concern. Notes that Amplitude Energy looks forward to hearing from GMTOAC as soon as practicable and asks whether they have any preferences as to how they receive further communications for the 2 new EPs.

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2025 0207 182536 5800	2025-02-07	Email	Out				Copy of 2025 0207 171021 7349 sent to EJA apologising for direct correspondence to GMTOAC. Hoped the materials would assist EJA's client in considering the proposed new EPs and looked forward to a substantive response and confirmation of the March 2025 meeting
2025 0218 130036 7349	2025/02/18	Email	Out		None	None	Passed on thanks for recent email. Enquired as to update to when we might receive a response to our correspondence dated 21 January 2025. Noted Amplitude Energy remains eager to meet with GMTOAC in March (as part of ongoing engagement on another EP and in relation to 2 new environment plans [ECSP EPs]) and would like to confirm details of that meeting as soon as practicable.
2025 0220 190339 7349	2025/02/20	Email	In	EJA noted it is still waiting for instructions from GMTOAC following their native title meetings on February 14-15, 2025. No decision was made on February 14 regarding a meeting in March. EJA was not present during the February 15 meeting. EJA noted they would follow up for instructions and would aim to respond next week.	None	None	
2025 0227 154143 7349	2025/02/27	Email	In	EJA noted the following relevant points in its correspondence:[1] (Other points noted are related to a different EP) **A1.** Referred to letter from Cooper Energy dated 21 January 225 and subsequent email correspondence from EJA. **Proposed meeting** **A2**. GMTOAC proposed a meeting to progress consultation with Cooper Energy on 12 April 2026. **A5.** Subject to further instructions from Gunditjmara native title holders at a closed meeting in mid-March, EJA and GMTOAC propose to schedule an additional day of meetings for its next native title meeting on 12 April 2025 to meet Cooper Energy and discuss consultation on: a. Athena Supply Project EP (currently under assessment with NOPSEMA; b. Annie-2 Development EP (in development with Cooper Energy); c. Wells Connections EP (in development with Cooper Energy); and d. Otway Offshore Operations EP (accepted by NOPSEMA). **A7.** If Cooper Energy could meet on 12 April 2025, GMTOAC would be grateful to receive as soon as possible requested: a. PowerPoint presentation(s) with slides for the: i. Proposed agenda items at par [8] of the letter,	**A7** – Cooper Energy has considered the information requests made (noting that the requests were made in connection with a number of other EPs in addition to this EP) and provided reasonable and detailed information. The requested information sheets and slides sought to address all of the queries raised by GMTOAC (notwithstanding the extensive nature of the information request submitted and the resources required to fulfil this request).	None	

[1] This correspondence raised issued in respect of other EPs that were being prepared by Amplitude Energy, but those issues are not summarised here as they are not relevant for the purpose of this EP.

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				including Cooper Energy's draft position on such items; ii. Topics identified at par [8] of the letter dated 15 November 2024 and any additional matters identified in par [7](b) of this letter. EJA requested that any such PowerPoint presentation should include, where relevant, images or other visual aids that clearly convey the information requested or topic nominated. Also, wherever possible, the amount of text per slide should be limited so as to avoid key messages being lost. b. Plain English information sheets on these matters, including identification of impacts and risks on, from and/or towards: i. Gunditjmara Nyamat Mirring and Mirring, including due to greenhouse gas emissions and climate change impacts in connection with the EPs; ii. Operational areas and environments that may be affected (EMBA) by the proposed activities within the EPs; iii. Sensitive ecosystems, protected areas (including Commonwealth and/or Victorian marine parks), sites of national significance, sites of international significance (e.g. only, Ramsar Wetlands and the Budj Bim Cultural Landscape, including the latter's integral outstanding values, such as the endangered *Kooyang* which is listed as near threatened under the International Union for Conservation of Nature's Red List of Threatened Species); iv. Totemic, Dreaming, and culturally significant animal species (such as *Kooyang* (short-finned eels), *Karntubul* (whales), and *Koorn Moorn* (seals)); v. All *Karntubul* species, but in particular, the endangered Pygmy Blue Whale and Southern Right Whale, including separate information sheets for both species covering topics such as: A. How the proposed activities are consistent with the EPBC Act Recovery Plan for each *Karntubul*; B. How the EPs address the actions within each Recovery Plan; C. Summaries of the best available scientific literature on the impacts of the proposed activities within the EPs on these species; vi. *Kooyang*, including studies or research on impacts on its lifecycle, its migration through the EMBAs and/or Operational Areas of the EPs, and any associated			

Event ID	Date	Event Method	In/Out	Summary of each response of relevant person response, objection or claim (Reg 24(b)(i))	Amplitude Energy's assessment of merit of general assertions	*Amplitude Energy's assessment of merit of any objection or claim about the adverse impact of each activity to which the EP relates (Reg 24(b)(ii)*	*Amplitude Energy communication, or response to objection or claim (reg 24(b)(iii)) or General Response (Amplitude Energy's response to queries, comments or assertions).* *Unique reference added where needed for clarity.* *(EP references added for context as appropriate)*
				impacts on the Budj Bim Cultural Landscape; vii. Noise and light pollution, including but not limited in relation to the above and below matters; viii. Unplanned oil and hydrocarbon spills and/or any other unplanned events (such as vessel collisions or vessel discharge events); ix. Cumulative impacts of the proposed activities (within Cooper Energy's EPs but also across the Otway Basin EPs, and how these have been assessed in accordance with the Objects of the Regulations, including s 3A of the EPBC Act); x. Responses to request for information in Attachment A of this letter. c. copies of correspondence from NOPSEMA to Cooper Energy, including in respect of requests for further information, variations or inclusions required under Pt 4 Div 4 of the Regulations: regs 29-32; and d. the most current version of the EPs (if finalised) listed at par [5]. **A8.** Subject to further instructions, the following draft agenda was proposed: a. Introduction/ Update on the EPs listed in the letter; b. Discussion of the Consultation Protocol; c. Co-design of consultation process (to include consultation milestones and timeframes); d. Consultation costs; e. Confidentiality and intellectual property requirements; f. Strategic regional environmental and cultural assessment; **A9.** Time permitting, a brief discussion about how the materials requested at par [7] above (and any further materials required for consultation) will be addressed in future consultation meetings. **A10**. For those materials outlined at par [7](a)(i) of the letter (including PowerPoint slides on the draft agenda items contained at par [7] above), GMTOAC requested to receive these materials by **14 March 2025**. **A11**. For those materials outlined at pars [7](a)(ii), [7](b) of the letter – [7](d), GMTOAC requested to receive these materials **within 28 days** of the letter, noting that it is unlikely they will be discussed, and if so, only in a cursory fashion, at an initial co-design meeting about consultation between GMTOAC, Gunditjmara and Cooper Energy on 12 April 2025. **Next steps**			

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				A16. As requested by Cooper Energy, enclosed is a cost estimate for the proposed meeting in April 2025 (Attachment B). **A17**. If there are matters for clarification, please contact EJA directly at the earliest opportunity. Otherwise GMTOAC look forward to receiving the requested materials per the timeframes indicated in the letter. **Attachment A – Requests for Information** The letter sets out an attachment which includes requests for information relating to the following matters: **A18.** How are the EPs consistent with r 4 of the Regulations, that is, to ensure that any **petroleum** activity or greenhouse gas activity carried out in an offshore area is: a. Carried out in a manner consistent with the principles of ecologically sustainable development set out in section 3A of the EPBC Act; and b. Carried out in a manner by which the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable; and c. Carried out in a manner by which the environmental impacts and risks of the activity will be of an acceptable level. **A19.** How do the EPs respond to and address the principles of ecologically sustainable development under section 3A of the EPBC Act, including that: a. Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations; 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; c. The principle of intergenerational 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; d. The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making; e. Improved valuation, pricing and incentive mechanisms should be promoted. **A20.** Further to s 3A of the EPBC Act and the Gunditjmara Nyamat Mirring Plan 2023-2033, how do the EPs ensure that the proposed activities are consistent with the best available scientific data and internationally agreed goal of a safe climate			

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				by reducing greenhouse gas emissions? How have the threats identified in the Gunditjmara Nyamat Mirring Plan, including but not limited to Table 1, page 22 "Existing or future threats to Nyamat Mirring – Climate Change", been addressed and mitigated? **A21:** How do the EPs account for and describe Gunditjmara rights, functions, interests and values in relation to the "environment" (as broadly defined under r 5 of the Regulations), including: a) Ecosystems and their constituent parts, including people and communities; and b) Natural and physical resources; and c) The qualities and characteristics of locations, places and areas; and d) The heritage value of places; and which includes social, economic and cultural interests and values in the matters mentioned in paragraphs (a) –(d) above? **A22:** How do the EPs account for and describe Gunditjmara rights, functions, interests and values in relation to the "environment" (as broadly defined under r 5 of the Regulations), including: a) Ecosystems and their constituent parts, including people and communities; and b) Natural and physical resources; and c) The qualities and characteristics of locations, places and areas; and d) The heritage value of places; **A23:** What if anything, does Cooper Energy, require from GMTOAC in order to more accurately describe the "environment" in the EPs as defined under the Regulations? **A24:** How do the proposed activities within the EPs ensure that no adverse action, interference, and/or inconsistency arises in connection with Gunditjmara people, communities, heritage, and/or social, economic and cultural interests? **A25:** Where such impacts are identified, on what basis does Cooper Energy justify that these impacts are of an acceptable level? Similarly, on what basis does Cooper Energy conclude that these impacts are mitigated to as low as reasonably practicable? **A26:** How has Cooper Energy demonstrated to NOPSEMA, that its proposed activities are not inconsistent with and/or do not contravene any recovery plans under the EPBC Act, per s 268 of that Act, including but not limited to the recovery plans for species of Karntubul (whales) such as the Southern Right Whale and the Blue Whale? **A27:** How do the proposed activities in the EPs ensure that no			

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				adverse action, interference, and/or inconsistency arises in connection with recovery actions and/or implementations of the above-mentioned recovery plans? **A28:** Given the nature of the proposed activities and associated impacts, how does Cooper Energy propose to avoid key foraging, breeding/calving and transit to and from BIA for key Karntubul species? **A29:** How has Cooper Energy considered the impact of its proposed activities on Kooyang (shortfinned eel)? How and in what manner do the EPs consider potential impacts of their proposed activities on the Outstanding International Values of the Budj Bim Cultural Landscape, including on the integrity of threatened Kooyang populations (and Kooyang husbandry and associated native title rights and interests concerning aquaculture) on which the World Heritage Area's Outstanding Universal Value is dependent? How will any identified impacts be mitigated to the legal standard required? If not already done, what is Cooper Energy's response to relevant actions, including in respect of Kooyang, within the Budj Bim Indigenous Protected Area Plan of Management 2022-2027 (for example only, see sections 5.5.2 – 5.5.7, Actions 29-31, 43)? What research has been commissioned or conducted in relation to the lifecycle of Kooyang and its migration through the EMBAs and/or Operational Areas for the proposed activities? **A30:** What steps has Cooper Energy taken to avoid impacts from the proposed activities on the Bonney Coast Upwelling and to address the critical cultural heritage values associated with this Upwelling? **A31:** How and in what manner have risks of harm on the cultural (or social) environment been described in the EPs? How and on what basis does Cooper Energy propose that those risks have been reduced to as low as reasonably practicable? **A32:** How and in what ways do measures within the EPs address and respond to cumulative risks and impacts (both direct and indirect) reasonably associated with the proposed activities, in light of the: a) Other activities, be that past, current or anticipated, in the Otway Basin; and b) Best available scientific literature and practice in the design of cumulative impact assessments? To avoid doubt, please identify how and in what ways such cumulative impact assessments adopt and reflect Aboriginal cultural heritage considerations. **A33:** How has Cooper Energy considered the risk of hydrocarbon or other vessel spills and/or collisions in their proposed activities, including from routine vessel traffic and/or rig operations? If so, how have any such environmental impacts been assessed and mitigated?			

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				A34: How and in what manner have all environmental factors within the environment (as defined under r 5) been considered in cumulative impact assessments undertaken by Cooper Energy? **A35:** How and in what manner have acoustic impacts of the proposed activities (including through the use of geophysical surveys) in the EPs on cultural heritage values (including harms to key mammal species, as well as the broader ecosystem and food chain) been considered in the EPs? **A36:** How and to what extent have acoustic impacts been considered in cumulative impact assessments, including cumulative impact assessments of the cultural environment? **A37:** What chemicals does Cooper Energy plan to use in its exploration well drilling and evaluation **ANNEXURE B – FEE SCHEDULE** - A template cost estimate provided.			
2025 0307 081546 5800	2025/03/07	Email	Out		None	None	**Email and letter from NRF to EJA** Confirmed that we appreciate the opportunity to meet with GMTOAC, and accept the invitation to meet on 12 April 2025. Requested confirmation of the proposed venue and time, in order to make travel arrangements. Acknowledged the effort involved in GMTOAC arranging such notified meetings. Requested that one additional item be added to the agenda, in the interests of building a two-way dialogue and common understanding between the parties. The proposed agenda item would be GMTOAC/Gunditjmara providing an overview of cultural values and sensitivities within their Sea Country/Nyamat Mirring associated with our activities offshore near Port Campbell, particularly any additional to those outlined in their published Nyamat Mirring Plan and previous correspondence. Confirmed we are currently reviewing EJA and GMTOAC's requests for information and will endeavour to provide materials within the requested timeframes. Requested confirmation as soon as possible that the proposed meeting on 12 April 2025 will proceed, noting that EJA had indicated in previous correspondence that the proposed meeting may be subject to the outcome of GMTOAC's upcoming meeting in mid-March 2025. Requested confirmation if the fee schedule included in previous correspondence represented the total cost sought for the meeting and a breakdown of those costs.

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							Requested that, to the extent that GMTOAC anticipates that an additional follow-up meeting will be required to progress consultation (i.e. following the 12 April 2025 meeting), then this meeting be scheduled for May 2025. Requested that GMTOAC advise if any date in May 2025 would suit, having regard to their upcoming native title meetings, and confirmed that further funding and support could be provided to facilitate that additional meeting.
2025 0314 163531 5800	2025/03/14	Email	Out		None	None	**Email from NRF to EJA:** Referred to previous correspondence. Attached proposed draft slides for the April meeting. Noted the slides are in draft form, as minor updates will be made before the meeting (e.g. to add in maps showing the relative position of the various EP activities). Noted that previous letter sent to EJA on 7 March 2025 requested confirmation that the April meeting would proceed, and that we are still waiting to receive confirmation. Requested confirmation that the meeting would be going ahead (or failing that, an update on when they expect to be able to confirm) so that travel arrangements can be made.
2025 0318 105249 5800	2025/03/18	Call	Out		None	None	**Phone call from NRF to EJA:** EJA confirmed that Amplitude Energy is invited to a meeting on Friday 11 April 2025, from 1pm to 3.30pm. The venue is to be advised, but will be on country so likely Portland or Hamilton. EJA noted it would send correspondence to confirm the above and respond to previous letters. NRF requested confirmation of who will be in attendance and breakdown of costs for the meeting. EJA confirmed that Amplitude Energy would be the only group meeting with GMTOAC on that day, and it would be attending to its own internal matters in the morning.
2025 0318 122925 6215	2025/03/18	Email	In	Email from EJA: EJA noted call with NRF earlier in the afternoon and confirmed that Cooper Energy would present to GMTOAC/Gunditjmara on 11 April 2025 from 1-3.30pm. EJA noted the location of the meeting was yet to be finalised but would be on Gunditjmara Country. EJA noted GMTOAC would update us with the meeting location as soon as it is confirmed and also contact us with a reply to the letter dated 7 March 2025 and feedback on the proposed PowerPoint slides.	None	None	
2025 0328 114547 3606	2025/03/28	Email	In	Email from GMTOAC attaching a letter dated 21 March 2025: GMTOAC noted the following points: **B1.** Thanked Amplitude Energy for the letter dated 7 March 2025, responding to EJA's letter dated 27 February 2025. Confirmed receipt of draft PowerPoint slides in email dated 15	None	None	

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				March 2025. **B2:** Noted this letter was being sent direct from GMTOAC and not their lawyers at EJA, as a first step towards independently managing consultation with of offshore petroleum proponents in the Otway Basin in accordance with the Gunditjmara Consultation and Negotiation Protocol. **B3:** Noted in response to our letter, GMTOAC confirms that: a. due to operational reasons, the proposed meeting will need to be rescheduled to Friday 11 April, and GMTOAC apologies for this and hopes the date is suitable for Amplitude Energy; b. the meeting will be held at 39 Hammond Street, Hamiton VIC 3300 from 1pm to 3:30pm. c. if there is time, and subject to Gunditjmara's agreement and feeling adequately informed about the d. proposed activities, the additional agenda item suggested in Amplitude Energy's letter is in principle agreed; e. the cost estimates attached to previous correspondence was a generic estimate, and as Amplitude Energy is allocated a 2.5 hour timeslot at the meeting the attendance fee is $13,375, which is inclusive of costs associated with hiring the meeting venue, IT and audiovisual support, catering, postage, staff administration, travel assistance and elders sitting fees; f. the April 2025 meeting will be attended by GMTOAC staff and Gunditjmara native title holders only, with no legal representatives present. It was requested that Cooper Energy has representatives attend at the meeting who have authority to make decisions in relation to consultation and resourcing of consultation on its behalf; and g. in response to Amplitude Energy's request to meet again with GMTOAC and Gunditjmara in May 2025, such further meetings are to be agreed with Gunditjmara, as proposed by the agenda item at paragraph [8](c) of EJA's letter dated 27 February 2025. **B4:** Thanked Amplitude Energy for sending their draft PowerPoint presentation to GMTOAC in advance of the 11 April 2025 meeting. Provided the following feedback and requests for Cooper Energy to incorporate into its final presentation: a. include timeframes when providing GMTOAC with updates on the EPs, including forecast and actual start/end dates for activities; b. reword agenda item 4 from "Co -design of the consultation process" to "Co -design of the consultation process in line with the Gunditjmara Consultation & Negotiation Protocol"; c. noted that based on similar initial meetings held with CGG			

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				and ConocoPhillips in February 2025, it is unlikely that there will be sufficient time on 11 April 2025 to discuss items 6 - 8 at length in the presentation. It is likely that any discussion of these items, if it occurs on 11 April 2025, will be at a high level only; d. requested that if there is time to address items 6 – 8, Amplitude Energy refers back to the Gunditjmara Consultation and Negotiation Protocol when discussing these items; and e. requested that Cooper Energy not include the image of the Gunditjmara Nyamat Mirring Plan 2023- 2033 in its presentation, as while GMTOAC understand that proponents have used this publicly available document to supplement actual consultation with GMTOAC and Gunditjmara, this document was not created for that purpose. **B5:** Noted that: a. GMTOAC look forward to receiving the remaining materials requested in EJA's previous letter, as well as a final version of the PowerPoint presentation, as soon as possible. b. After receiving those materials and subject to capacity, GMTOAC would endeavour to provide any feedback on the materials to ensure they are appropriate and adapted for the purpose of the meeting. c. Subject to when GMTOAC received the final versions of the materials, there may or may not be enough time to mail them out to native title holders within the 21-day notice period before our native title meeting on 11 April 2025. If that deadline is missed, GMTOAC will explore opportunities to provide documents by other means but note Gunditjmara's strong preference to receive physical copies of materials three weeks prior to scheduled meetings. **B6:** Instructed Amplitude Energy to contact GMTOAC directly with any further questions ahead of the meeting.			
2025 0329 120653 6215	2025/03/29	Email	Out		None	None	**Email from NRF to EJA with 9 attachments** Attached letter dated 29 March 2025 and: a. 4 information sheets setting out information in relation to each of our client's EPs (Athena Supply Project EP, Annie-2 EP, Wells Connection EP and Otway Offshore Operation EP); b. 3 additional information sheets in relation to specific topics (potential impacts on sensitive ecosystems, whales and cultural features); and c. 2 maps (one showing the location of the EPs, and one showing the spatial extent of the EPs). Confirmed that NRF have tried to ensure that the size of these files are manageable, and requested confirmation that GMTOAC was able to receive the information and pass it along to members. **Letter enclosed with the email:**

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							Confirmed NRF continue to act for Cooper Energy for this matter. Referred to previous correspondence in this matter, including letters dated 27 February 2025 and 28 March 2025. Confirmed Amplitude Energy appreciates the opportunity to meet and is looking forward to progressing consultation with GMTOAC and its members on 11 April 2025. Noted the new timing and location of the meeting. Confirmed that Amplitude Energy has been preparing materials in response to the information requests made in EJA's letter dated 27 February 2025. However, the information request contained in that letter was voluminous and while Cooper Energy has been using all reasonable endeavours to prepare the material for GMTOAC, some of the information sheets are not yet finalised, but will be provided shortly. Confirmed that enclosed with this correspondence, to allow GMTOAC to begin to consider the material, is: a. a plain English information sheet regarding the **Athena Supply EP**, setting out planned impacts, unplanned impacts and cumulative impacts (and associated control measures) for the activities proposed under that EP; b. a plain English information sheet regarding the **Otway Offshore Operations EP**, setting out planned impacts, unplanned impacts and cumulative impacts (and associated control measures) for the activities proposed under that EP; c. a plain English information sheet regarding the **ECSP - Wells Connection EP**, setting out proposed planned impacts, proposed unplanned impacts and potential cumulative impacts (and proposed associated control measures) for the activities proposed under that EP (noting that this EP is still in development); d. a plain English information sheet regarding the **ECSP - Annie-2 Development Well EP**, setting out proposed planned impacts, proposed unplanned impacts and potential cumulative impacts (and proposed associated control measures) for the activities proposed under that EP (noting that this EP is still in development); e. an information sheet regarding potential impacts on whales; f. an information sheet regarding potential impacts to sensitive ecosystems; g. an information sheet regarding potential impacts to cultural features; h. a map showing the location of the operational areas of each of the EPs in relation to each other and the GMTOAC RAP area; and i. a detailed map showing the spatial extent of the EPs. Noted these materials will be followed shortly by the provision of: a. a recorded copy of an audio visual presentation containing information about the activities proposed under the EPs; and b. an updated slide pack for the meeting on 11 April 2025, which contains GMTOAC's suggested amendments (as set out in their correspondence dated 28 March 2025) and minor amendments

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							proposed by Amplitude Energy Noted that the purpose of providing this information to GMTOAC is to allow it to consider and assess potential impacts of our proposed activities to their functions, interests and activities. Notes that Amplitude Energy considers that not all of the information requested in your letter dated 27 February 2025 is relevant for this purpose and does not propose to provide such information. Notes the Athena Supply Project EP and Otway Operations EP have been submitted to NOPSEMA for acceptance (and in the case of the Otway Operations EP, approved), but Amplitude Energy has nonetheless provided the requested information in relation to each of those EPs as a demonstration of good faith and genuine engagement with GMTOAC. Provides a table which sets out the information requested, and the status of the provision of that information (including, where appropriate, references to the material provided to assist GMTOAC's consideration of the material). Confirms Amplitude Energy will continue to progress the outstanding information requested, and will provide this in due course. Confirms Amplitude Energy is looking forward to progressing meaningful consultation with GMTOAC on 11 April 2025. Invites GMTOAC to contact NRF with any queries, and that NRF otherwise looks forward to receiving its response.
2025 0329 182445 7349	2025/03/29	Email	Out				**Email from Amplitude Energy to GMTOAC with 9 attachments** Notes that Cooper Energy appreciates the direct correspondence received from GMTOAC on the previous day and looks forward to following up soon. Shares correspondence sent to EJA of the same date (including attachments).
2025 0401 124817 5800	2025/04/01	Email	Out				**Email from Amplitude Energy to EJA:** Notes the below correspondence received direct from GMTOAC on Friday afternoon. Requests that EJA pass on thanks to GMTOAC for their response. Notes that the letter refers to GMTOAC taking steps to self-manage its consultation processes, and that NRF (and Cooper Energy) had previously understood that all correspondence relating to consultation was to be directed to EJA (rather than GMTOAC directly), in accordance with the wishes of GMTOAC. Requests confirmation if EJA are still GMTOAC's appointed lawyers in relation to consultation on these environment plans. Notes that it is not appropriate or ethical for NRF to correspond with a legally represented party without the consent of the appointed lawyers. Requests clarification whether Cooper Energy should correspond directly with GMTOAC, or if GMTOAC's requirements remain that all matters

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							relating to consultation are directed to EJA. Notes that GMTOAC has provided updated details of the meeting on 11 April 2025. Requests that EJA provide: a. a list of attendees; b. a breakdown of the proposed costs; and c. information about what technology will be available in the meeting room so that our client can plan accordingly.
2025 0402 195256 5800	2025/04/02	Email	Out				**Email from NRF to EJA:** Notes previous email from NRF to EJA, and GMTOAC's email on 28 March 2025. Attaches a revised copy of the slides which takes into consideration GMTOAC's feedback.
2025 0402 201811 6215	2025/04/02	Email	Out				**Email from Amplitude Energy to GMTOAC:** Notes correspondence of the same date sent from NRF to EJA. Confirms Amplitude Energy looks forward to meeting in Hamilton the following week.
2025 0403 142541 7349	2025/04/03	Email	Out	**Email from EJA to NRF:** Thanked NRF for its email. Confirmed that Cooper Energy, and NRF on behalf of Cooper Energy, can contact GMTOAC directly in relation to consultation on Cooper Energy's current EPS. Noted EJA is not presently instructed to act for GMTOAC in relation to the Cooper Energy EPs, and that they would let NRF know if these instructions change. Noted that EJA may, from time to time, provide GMTOAC with discrete assistance in relation to consultation on Cooper Energy's EPs, subject to any further instructions from GMTOAC. Confirmed that any questions in relation to the 11 April 2025 meeting with GMTOAC and Gunditjmara, should be directed to GMTOAC.	None	None	
2025 0507 100837 5800	2025-05-07	Email	Out		N/A	N/A	**Email from Amplitude Energy to GMTOAC**: Thanks GMTOAC and the Gunditjmara for their time and engagement at the meeting on 11 April 2025. Requests that GMTOAC advise whether they require any further specific information or would like any written follow up material on any issues raised by members during the meeting, Requests GMTOAC provides any cost estimates they want us to consider, including for cultural value assessments.

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							Requests GMTOAC provides any feedback from members, including whether here are any proposed changes to the format or presentation for further discussions. Requests GMTOAC confirms next steps to progress consultation, and provides cost estimates if further meetings are required. Provides a summary of the matters that were covered at the meeting including what our activities under the EPs are, a status update on each EP, our proposed timing for submission of the 2 new EPs for assessment by NOPSEMA, our willingness to provide support costs to GMTOAC for consultation on our EPs, our commitment to respecting IP and confidentiality in any information GMTOAC provides during consultation, and what GMTOAC's environmental values and sensitivities are. Notes that Amplitude Energy is willing to provide support costs to GMTOAC for the purpose of consultation on this EP, subject to receiving cost estimates for consideration. Confirms Amplitude Energy is committed to respect GMTOAC's intellectual property and confidentiality in any information provided during consultation. Attaches the supplementary slide deck, elements of which were used to support responses to specific queries raised during the meeting. Notes hard copies of the supplementary slides were also left at the meeting venue. Notes we are finalising our response to Attachment A to EJA's letter dated 27 February 2025 and will respond in due course. Notes GMTOAC's request that material be provided in advance of any further meetings and respectfully request that they provide any requests for further written information as early as practicable so that we can meet the requested timeframes Notes that Amplitude Energy's team enjoyed meeting and speaking with members, and looks forward to building a closer relationship based on mutual trust.
2025 0512 120216 7955	2025-05-12	Email	In	Email related to invoicing for the recent meeting.	N/A	N/A	
2025 0512 123859 8692	2025-05-12	Email	Out		N/A	N/A	**Email from Amplitude Energy to GMTOAC**: Discussion regarding invoicing for meetings.
2025 0512 125324 5583	2025-05-12	Email	In	Provided cost details for recent meeting.	N/A	N/A	
2025 0512 160203 5028	2025-05-12	Email	Out		N/A	N/A	**Email from Amplitude Energy to GMTOAC**:

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							Notes that we would organise a PO for costs associated with recent meeting.
2025 0522 191741 1225	2025-05-22	Email	Out		N/A	N/A	**Email from Amplitude Energy to GMTOAC** Shares dates for planned webinars and community sessions, in case the opportunities are of interest, but notes that Gunditjmara have indicated they prefer to be consulted via planned group meetings. Suggests a general catch up while Amplitude Energy is in the Portland region for these community sessions. Attaches a response to the extensive questions from EJA's letter of 27 February 2025. The response is 13 pages long, addressing all 19 questions contained in EJA's correspondence of 27 February 2025. The responses are presented in a table format, and numbered, for ease of review. Where appropriate, responses direct to relevant sections of the information sheets that were previously provided. Where questions are more specific, detailed response are given that provide new information not previously covered by the information sheets – for example, lists of existing literature that has been considered in relation to whale species, and our responses to various actions from the Budj Bim Indigenous Protected Area Plan of Management.
2025 0620 124140 8749	2025-06-20	Email	Out		N/A	N/A	**Email from Amplitude Energy to GMTOAC** Provides an update on the progress of the ECSP Annie-2 Development Well and ECSP Well Connections EPs. Provides access to our interactive webinar covering the ECSP: Annie-2 Development Well and the ECSP: Wells Connection EPs that was made available to the public for 4 sessions over late May/early June, and a pre-recorded version has been uploaded to our website. Confirms QR codes for the consultation pages were previously included on the information sheets provided during the meeting in April 2025. Confirms the cultural heritage assessment based on public data and geophysical survey data has been progressed. This will be used to inform our preparation of the 2 new EPs. Offers to share an overview at a suitable time if of interest. Confirms the cumulative impact assessment for the purpose of preparing the 2 new EPs was also progressed. Notes this topic was discussed at the April meeting in some detail; requests they advise if any further questions on that is required. Requests confirmation of whether members have confirmed they would like to meet again in August, and that details be provided regarding date, location and proposed agenda. Notes that timing of submission of the two EPs had changed from prior to August to by the end of August for the Annie-2 Development Well EP, and around November 2025 for the ECSP Wells Connection EP. Notes we look forward to hearing from GMTOAC, will keep in touch and remain available to meet.
2025 0722 145431 2053	2025-07-10	Call	Out		N/A	N/A	Called 30 May

Event ID	Date	Event Method	In/Out	Summary of each response of relevant person response, objection or claim (Reg 24(b)(i))	Amplitude Energy's assessment of merit of general assertions	*Amplitude Energy's assessment of merit of any objection or claim about the adverse impact of each activity to which the EP relates (Reg 24(b)(ii)*	*Amplitude Energy communication, or response to objection or claim (reg 24(b)(iii)) or General Response (Amplitude Energy's response to queries, comments or assertions).* *Unique reference added where needed for clarity.* *(EP references added for context as appropriate)*
							3 June 4 June 2 July 10 July
2025 0723 165810 1008	2025-07-23	Email	Out		N/A	N/A	Exchanged text messages 3 June and 2 July, but no opportunity to meet or speak emerged.

Table 5-3: Consultation demonstration - GMTOAC

Consultation demonstration			
Item	Regulation/guidance	Description	How achieved
Sufficient information	Regulation 25(2)	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.	• Information was provided to GMTOAC about this EP in an iterative manner over a period of more than 6 months. Throughout this period, information was provided to GMTOAC in numerous forms including via detailed correspondence, tailored information sheets, in-person and recorded audio-visual presentations, Q&A responses (both in-person and in writing) and the general consultation website. All information was prepared, having regard to GMTOAC's communication requirements as set out in its Consultation & Negotiation Protocol, i.e. (to the extent possible) in plain English and non-technical language and incorporating visual elements. • We first flagged to GMTOAC that we would be consulting on this EP in December 2024, to allow advanced planning of any in-person meeting(s) they required. • We followed up with more detailed communications in early February 2025, after the holiday period. This included a consultation sheet on this EP, which provided a summary of the proposed activities, their expected timing and duration, and a summary of key potential environmental risks and impacts and how they would be managed. The letter also outlined the cultural values and sensitivities of Gunditjmara that Amplitude Energy was aware of from previous consultation activities and its Sea Country Plan, and that we understood that GMTOAC might want further information about such matters as how significant animal species could be impacted and are being protected, what involvement GMTOAC would want in an oil spill scenario, and what cumulative impacts may arise from cumulative activities in the region. • In this correspondence, we also invited GMTOAC to provide any guidance around communication (e.g. advice or resources, or model communications) so that we could tailor our consultation materials accordingly. We also invited suggestions about information to include on our consultation website and/or the planned pre-recorded video to make it more valuable to the Gunditjmara community. • In March 2025, we prepared additional, bespoke consultation materials for GMTOAC, that were either in response to specific information requests from EJA (who were acting on their behalf at the time) or were prepared for the purpose of attending GMTOAC's native title meeting to consult with members in-person. • The consultation materials provided in response to EJA's requests included maps of the spatial extent and location of our current and proposed activities (including under this specific EP), and a very detailed information sheet on this specific EP which separately summarised: 1) the impacts, risks and control measures for planned activities; 2) the impacts, risks and controls for unplanned activities; and 3) the cumulative impacts and risks and control measures for foreseeable projects and activities. This was accompanied by 3 additional information sheets that were tailored to key areas of concern for GMTOAC, namely: 1) Potential Impacts to Whales 2) Potential Impacts to Sensitive Ecosystems 3) Potential Impacts to Cultural Features

Consultation demonstration			
			• Additionally, a draft agenda and PowerPoint presentation slides were prepared for the Native Title Meeting, and that content was reviewed by, and incorporated feedback from GMTOAC, prior to the meeting. • In April 2025, we attended GMTOAC's native title meeting in Hamilton, Victoria, and held a ~2 hour interactive session with members, utilising the agreed PowerPoint presentation slides, the printed maps and information sheets referred to above, and some supplementary PowerPoint presentation slides. The maps and information sheets appeared to have been distributed to members by GMTOAC, in advance of the meeting, as some members had brought hard copies with them. We also brought hard copies with us, and handed them out during the meeting. • The members meeting allowed us to present information in a verbal format, and there was Q&A discussion throughout the presentation, which allowed for a meaningful two-way dialogue. The Q&A discussion covered a wide range of topics including the specific elements of Sea Country that were of particular importance to, Gunditjmara and the measures being implemented to manage associated risks and impacts of our activities. The volume and quality of the questions raised during this meeting demonstrated that the audience engaged with our presentation, and that they had considered and understood the proposed activities and the potential risks and impacts. The presentation was delivered by subject matter experts from Amplitude Energy, who were able to answer all questions put forward by the audience and no matters remained outstanding at the end of the meeting. • At the Native Title Meeting we also provided members with a handout with a QR code that directed to our consultation website. This website went live a few days after the meeting, and provided further information about the activity, the location and timing of the activity, potential unplanned events, and the associated impacts and risks. The website provided information in a clear and user-friendly format and had contact details available should a visitor to the website seek further information. This website also provided a link to the NOPSEMA brochure "Consultation on offshore petroleum plans- information for the community". • Following the Native Title Meeting, further information was provided to GMTOAC during April and May 2025, in response to requests from GMTOAC and/or EJA (whilst they were still acting on their behalf). This included providing the shape files for the operational area for this EP and preparing a detailed response (of 13 pages) to a list of 19 questions that were received in correspondence from EJA in February 2025. This response was provided to GMTOAC, for completeness, and notwithstanding that they advised that EJA were no longer acting for them in relation to this EP. This response was prepared by subject matter experts from Amplitude Energy, and drew upon and was tied back to the maps and information sheets that had been provided previously to GMTOAC. • In June 2025, further correspondence was sent to GMTOAC that included a link to our pre-recorded audio-visual presentation on this EP and updates on the progress of our cultural heritage assessment and cumulative impact assessments, with offers to share an overview or answer any further questions about them. • We have responded to all questions received in correspondence from GMTOAC, and its legal representatives EJA, that were received during the substantive consultation period. We have also repeatedly checked with GMTOAC, throughout this period, if they require any further information or meetings with us. • No outstanding feedback or requests for additional information from GMTOAC, or individual members, remain as at the time of submission of this EPs. As part of ongoing engagement, Amplitude Energy will continue to provide reasonable and relevant information to GMTOAC about this EP.
Sufficient time	Regulation 25(3)	The titleholder must allow a relevant person a reasonable period for the consultation.	• Amplitude Energy made initial contact with GMTOAC in December 2024 to foreshadow that we were preparing, and consulting on, this EP. • Further information was provided to GMTOAC on 7 February 2025 outlining the proposed activities under this EP, the expected timing and duration, and the key potential environmental risks and impacts and how they would be managed. • There have been multiple communications and interactions between us since this time, as shown in the consultation summary table. GMTOAC have been provided with a reasonable period to engage in consultation, including the opportunity to request further information or meetings, as desired by its members. • We published advertisements in the Koori Mail, the National Indigenous Times, the Australian, the Herald Sun, and in regional media along the western Victorian coastline in early May 2025 advising of the proposed activities, directing readers to our activities website and seeking feedback from relevant persons. Geo-targeted social media was also run. • Our activities website has been published since April 2025, and a link and QR code were included in hard copy materials shared on 11 April 2025, and again via email in June 2025.

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			• We have provided information to, and engaged in discussions with GMTOAC on this specific EP, for over 6 months, demonstrating a reasonable period for consultation. Applicable benchmarks for activities of this nature and scale (and greater than) apply consultation periods typically of between 4-12-weeks. • More than 4 months have passed since our in-person presentation to GMTOAC in April 2025, and consistent contact has been made with GMTOAC over this period, with offers to answer any further questions and/or attend follow up meetings . • We advised GMTOAC on 20 June 2025 of our intention to submit this EP to NOPSEMA by end of August, after initially indicating submission in June 2025, and have not receive any further response to that update.
Sensitive information	Regulation 25(4)(a)	The titleholder must tell each relevant person the titleholder consults that: (a) the relevant person may request that particular information the relevant person provides in the consultation not be published;	• Early in the consultation process, we advised GMTOAC in writing that it could request that particular information provided in the consultation process not be published.
Ongoing consultation	Regulation 22 (15)(b)	15) The implementation strategy must provide for appropriate consultation with: (b) other relevant interested persons or organisations.	• We will engage in ongoing consultation with all relevant persons throughout the life of the project, and this been articulated to GMTOAC.
Summary of each response	Regulation 24(b)(i)	The environment plan must contain the following: b) a report on all consultations under section 25 of any relevant person by the titleholder, that contains: (i) a summary of each response made by a relevant person;	• A summary of each response is included in the EP.
Assessment of claims and objections	Regulation 24(b)(ii)	The environment plan must contain the following: b) a report on all consultations under section 25 of any relevant person by the titleholder, that contains: (ii) an assessment of the merits of any objection or claim about the adverse impact of each activity to which the environment plan relates	• We have assessed the objections and claims (as defined by the Regulations) raised by GMTOAC during the consultation process, and undertaken a merit assessment of each of these objections and claims. GMTOAC raised four specific concerns regarding culturally significant species and cultural heritage, being: ○ Deen Maar Island (Lady Julia Percy Island) ○ Kooyang (short-finned eel) ○ Karntubul (whales) ○ The Bonney upwelling • We have captured our assessment of these claims and objections in the consultation summary tables.
Response to claims and objections	Regulation 24(b)(iii)	The environment plan must contain the following: b) a report on all consultations under section 25 of any relevant person by the titleholder, that contains: (iii) a statement of the titleholder's response, or proposed response, if any, to each objection or claim	• We have responded to all correspondence received from GMTOAC, and its legal representative EJA (when previously acting), and provided our feedback on each objection or claim made therein. • We have captured our responses to GMTOAC in the consultation summary tables.
Full text	Regulation 24(b)(iv)	The environment plan must contain the following: b) a report on all consultations under section 25 of any relevant person by the titleholder, that contains: (iv) a copy of the full text of any response by a relevant person	• The full text record of our exchanges with GMTOAC are contained in the sensitive information file, including all relevant attachments.
Consultation appropriate to relevant person	NOPSEMA Guideline - *Consultation in the course of preparing an environment plan*	…. carefully considering what the appropriate consultation processes are for each relevant person and adapting those processes to the nature of the authority, persons and organisations to be consulted.	• We were guided by GMTOAC's Consultation & Negotiation Protocol and sought advice from GMTOAC on how best to consult with Gundijmara. • We sought to engage with GMTOAC early (i.e. December 2024), in line with the Consultation & Negotiation Protocol, and ahead of consulting with other broader stakeholders. This was also done to allow enough time to hold more than one in-person meeting, if they required. • In our early correspondence to GMTOAC in February 2025, we outlined key themes and principles that we had identified from their Consultation & Negotiation Protocol, and opportunities we had identified to tailor our consultation process accordingly. We invited their feedback on these suggestions and opportunities, and welcomed any further guidance they wished to provide in respect to communication.

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Consultation informs an understanding of the environment	NOPSEMA Guideline - *Consultation in the course of preparing an environment plan*	The requirement to include details of the environmental impacts and risks into an environment plan cannot be met without an understanding of the social, economic and cultural features of the environment.	• We have addressed specific concerns in the EP raised by GMTOAC regarding culturally significant species and cultural heritage, being
			  ○ Deen Maar Island (Lady Julia Percy Island)
			  ○ Kooyang (short-finned eel)
			  ○ Karntubul (whales)
			  ○ The Bonney upwelling
			• We also reviewed the published GMTOAC Gunditjmara Nyamat Mirring (Sea Country) plan to better understand their environmental values and cultural sensitivities, and used this to further inform the impact and risk assessment within the EP.
			• We understood from correspondence with GMTOAC via EJA that GMTOAC are concerned about cumulative impacts of activities within their Sea Country. We took these concerns into account when preparing the EP and have specifically considered cumulative impacts in the EP.

Genuine and meaningful consultation	NOPSEMA Guideline - *Consultation in the course of preparing an environment plan*	Consultation should be a genuine and meaningful two-way dialogue in which relevant persons are given sufficient information and time to allow them to make an informed assessment of the possible consequences of the activity on their functions, interests or activities	• We sought to engage early with GMTOAC, in accordance with the preferences expressed in their Consultation & Negotiation Protocol. We first contacted them in December 2024 to flag the preparation of this EP, and request a meeting to discuss our activities. This was well in advance of commencing consultation with broader stakeholders, which occurred in May 2025. • We consulted with GMTOAC in April 2025 at a Native Title members meeting and materials presented were guided by GMTOAC's requests and preferences. GMTOAC provided us prior notice of the values and sensitivities important to them through EJA's letter dated 27 February 29025; our presentation was developed and delivered in a manner that acknowledged and discussed the activities, impacts and risks in relation to these particular values and sensitivities. The presentation allowed for Q&A throughout, with members online and in person, which provided meaningful two-way dialogue. A copy of the PowerPoint slides was provided to GMTOAC in advance of the meeting, with the agreed content. On the day of the meeting, the presentation was recorded by GMTOAC on video. Amplitude Energy attended the meeting represented by senior team members who were able to address queries raised by GMTOAC members from the floor. • Since the meeting, we have remained co-operative, amicable and open to further meetings, questions or requests for information. • We have also had written exchanges with GMTOAC, and/or their legal representatives EJA, for 8 months which demonstrates a two-way dialogue. In these exchanges, we have answered all questions, objections and claims that have been raised. • We have made numerous attempts over the consultation period to check the appetite for additional meetings and engage in in-person, two-way dialogue. • We have also provided a clear point of contact, in our extended enquiry efforts, should any individual GMTOAC members want to be consulted directly. • Our openness and availability to consult are apparent from the consultation summary report.
Consultation method should be appropriate	NOPSEMA Guideline - *Consultation in the course of preparing an environment plan*	Where interests are held communally, the method of consultation will need reasonably to reflect the characteristics of the interests affected by the proposed petroleum activity	• We have reviewed relevant Country plans, regulatory guidance and case law, in planning our consultation method for First Nations groups with communal interests, to ensure that it is respectful, effective and appropriately adapted. • Emails were sent to GMTOAC requesting advice on how consultation on this EP could be conducted, including whether they had any other guidance around communication that they wanted to share, including any examples they wanted us to consider or model our communications on. • We have attended the GMTOAC members meeting, which was organised by, and set up in a format designed by, GMTOAC. GMTOAC provided us prior notice of the values and sensitivities important to them; these are consistent with the Gunditjmara Nyamat Mirring Plan 2023-2033 that was noted on the GMTOAC website in March 2024. Our presentation was developed and delivered in a manner that acknowledged and discussed the activities, impacts and risks in relation to these particular values and sensitivities.
Demonstration consultation is appropriate and adapted	NOPSEMA Guideline - *Consultation in the course of preparing an environment plan*	A titleholder will need to demonstrate to NOPSEMA that what it did constituted consultation appropriate and adapted to the nature of the interests of the relevant persons.	• Ahead of our meeting in April 2025, we were aware from long running consultation with GMTOAC, of the values and sensitivities important to them and their members; these are consistent with the since publicly available Gunditjmara Nyamat Mirring Plan 2023-2033. • Our consultation materials were developed and delivered in a manner that acknowledged and discussed our activities and associated impacts and risks in relation to these particular values and sensitivities. • Our presentation allowed ample time for Q&A with members online and in person, which provided meaningful two-way dialogue. We ensured that all Amplitude Energy representatives were sufficiently knowledgeable of the relevant issues so as to ensure that questions could be meaningfully answered on the day. The presentation was provided electronically to GMTOAC in a format requested by them, and we were also informed that the meeting was being recorded on

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			video, to be provided to by GMTOAC to members who may not have been able to attend the meeting. Handouts were provided to members on the day. • Amplitude Energy provided flexibility in making its staff available to meet when and where GMTOAC preferred. • To further ensure that our consultation process was appropriate and adapted to GMTOAC, we also engaged a specific cultural heritage adviser to review the planning and consultation material used for the April meeting and the subsequent drop-in sessions to ensure that materials were culturally appropriate should any Traditional Owners attend. • We were conscious of GMTOAC's role as the representative body for Gunditjmara people and accepted at face value its statements that it was the appropriate body to engage in consultation (noting that individual members of Gunditjmara were always welcome to self-identify outside of the representative structure should they elect to do so). We sought to be respectful of GMTOAC's role as the primary body capable of speaking for Gunditjmara cultural heritage as stated in the Consultation and Negotiation Protocol. • We were understanding of the limited resources of GMTOAC and the potential for delay due to competing demands on their time.. We specifically sought to ensure that we did not apply any undue pressure on GMTOAC over the course of consultation. Noting the limited resources of GMTOAC, we were pleased to assist with funding GMTOAC to participate in consultation.
Obligation to consult discharged	NOPSEMA Guideline - *Consultation in the course of preparing an environment plan*	The obligation to consult with relevant persons must be discharged prior to submitting an environment plan to NOPSEMA.	• Given compliance with the regulations as shown above, and alignment with the Guidelines that were informed by case law, Amplitude Energy considers the obligation to consult with GMTOAC has been discharged in a reasonable and practical manner, that supports the objects of the Regulations.

6.0 Other stakeholders

Table 6-1 Other stakeholders-summary of engagement

Event ID	Relevant Person ID	Stakeholder	Date	Event Method	In/Out	Event Summary
2025 0515 160459 6215	52	Bev McArthur MP, Member for Western Victoria Region	2025-05-15	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons
2025 0519 195131 4493	90	Dan Tehan MP, Federal Member for Wannon	2025-05-19	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons
2025 0519 122504 6215	151	Federation of Victorian Traditional Owner Corporations	2025-05-19	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons
2025 0519 122640 3606	155	First Nations Legal & Research Services (Vic)	2025-05-19	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons
2025 0519 122842 3717	193	Gunditjmara Aboriginal Cooperative Ltd	2025-05-19	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons
2025 0515 160538 3606	571	Jacinta Ermacora MP - Member for Western Victoria	2025-05-15	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons
2025 0519 195153 2425	202	Joe McCracken MP- Member for Western Victoria Region	2025-05-19	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons
2025 0515 160459 6215	310	Richard Riordan MP-Member for Polwarth	2025-05-15	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons

Event ID	Relevant Person ID	Stakeholder	Date	Event Method	In/Out	Event Summary
2025 0515 160459 6215	233	Roma Britnell MP - Member for South West Coast	2025-05-15	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons
2025 0519 123011 7972	414	Winda Mara Aboriginal Corporation	2025-05-19	Email	Out	Provided bulk mailout #1 for information purposes and to seek additional relevant persons